HCD-CP500K/CP500MD

SERVICE MANUAL

Ver. 1.2 2005. 02

Self Diagnosis Supported model

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Chinese Model
HCD-CP500MD
Korea Model
HCD-CP500K

HCD-CP500K/CP500MD is the Amplifier, MD deck, CD player, Tape player and Tuner section in CMT-CP500K/CP500MD.

CD Section	Model Name Using Similar Mechanism	New
	CD Mechanism Type	CDM55F-K4BD43
	Base Unit Type	BU-K4BD43
	Optical Pick-up Type	KSM-213DHAP
MD Section	Model Name Using Similar Mechanism	New
	MD Mechanism Type	MDM-7B
	Optical Pick-up Type	KMS-260B
Tape deck Section	Model Name Using Similar Mechanism	New
	Tape Transport Mechanism Type	Mech deck

SPECIFICATIONS

Amplifier section

For the U.S. model

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 6-ohm loads, both channels driven, from 70 - 20,000 Hz; rated 18 watts per channel minimum RMS power, with no more than 0.9% total harmonic distortion from 250 milliwatts to rated output.

US, Canadian model:
Continuous RMS power output (reference):
35 + 35 W
(6 ohms at 1 kHz, 10% THD)
Total harmonic distortion: less than 0.07% (6 ohms at 1 kHz, 18 W)

AEP, UK model:
DIN power output (rated): 30 + 30 W
(6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference):
35 + 35 W
(6 ohms at 1 kHz, 10% THD)
Music power output (reference):
85 + 85 W

Other models:
The following measured at 230 V AC, 60 Hz
DIN power output (rated): 30 + 30 W
(6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference):
35 + 35 W
(6 ohms at 1 kHz, 10% THD)
The following measured at 220 V AC, 60 Hz
DIN power output (rated): 24 + 24 W
(6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference):
27 + 27 W
(6 ohms at 1 kHz, 10% THD)

— Continued on next page —

MICRO HI-FI COMPONENT SYSTEM

9-873-216-03
2005B16-1
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Sony Corporation
Personal Audio Group
Published by Sony Engineering Corporation

SONY

Specifications (continued)

Inputs
ANALOG IN (phono jacks): Sensitivity 250 mV, impedance 47 kilohms
DIGITAL OPTICAL IN (Supported sampling frequencies: 32 kHz, 44.1 kHz and 48 kHz)

Outputs
PHONES (stereo minijack): Accepts headphones with an impedance of 8 ohms or more
SPEAKER: Accepts impedance of 6 to 16 ohms

CD player section

System	Compact disc and digital audio system
Laser	Semiconductor laser (λ = 780 nm) Emission duration: continuous
Wavelength	780 – 790 nm
Frequency response	2 Hz – 20 kHz (±0.5 dB)

Tape player section

Recording system	4-track 2-channel stereo
Frequency response	50 – 13,000 Hz (±3 dB), using a Sony TYPE I cassette
Wow and flutter	±0.15% W. Peak (IEC) 0.1% W. RMS (NAB) ±0.2% W. Peak (DIN)

MD deck section

System	MiniDisc digital audio system
Laser	Semiconductor laser (λ =780 nm) Emission duration: continuous
Sampling frequency	44.1 kHz
Frequency response	5 Hz – 20 kHz

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range
US and Canadian model: 87.5 – 108.0 MHz (100-kHz step)
Other models: 87.5 – 108.0 MHz (50-kHz step)
Antenna: FM wire antenna
Antenna terminals: 75 ohm unbalanced
Intermediate frequency: 10.7 MHz

AM tuner section

Tuning range
US and Canadian model: 530 – 1,710 kHz (with the tuning interval set at 10 kHz) 531 – 1,710 kHz (with the tuning interval set at 9 kHz)
AEP and UK model: 531 – 1,602 kHz (with the tuning interval set at 9 kHz)
Other models: 530 – 1,710 kHz (with the tuning interval set at 10 kHz) 531 – 1,602 kHz (with the tuning interval set at 9 kHz)
Antenna: AM loop antenna, external antenna terminal
Intermediate frequency: 450 kHz

General

Power requirements
US and Canadian model: 120 V AC, 60 Hz
Thai and Chinese model: 220 V AC, 50/60 Hz
AEP and UK model: 230 V AC, 50/60 Hz
Australian and Hong Kong model: 220 – 240 V AC, 50/60 Hz
Other models: 110 – 120 V or 220 – 240 V AC , 50/60 Hz Adjustable with voltage selector

Power consumption
AEP and UK model: See the nameplate 0.5 W (in the standby mode)
Other models: See the nameplate

Dimensions (w/h/d): Approx. 190 × 252 × 335 mm incl. projecting parts and controls

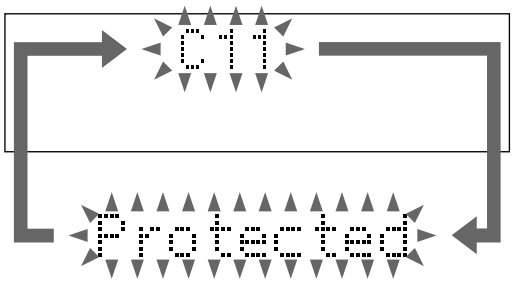
Mass: Approx. 7.0 kg

Supplied accessories: Remote commander (1) AM loop antenna (1) FM wire antenna (1) Batteries (2)

Design and specifications are subject to change without notice.

Self-diagnosis display

This system has a Self-diagnosis display function to let you know if there is a system malfunction. The display shows a code made up of three letters and a message alternately to show you the problem. To solve the problem refer to the following list. If any problem persists, consult your nearest Sony dealer.



C11/Protected

The MD is protected against erasure.

Remove the MD and slide the tab to close the slot (see page 16).

C12/Cannot Copy

You tried to record a CD or MD with a format that the system does not support, such as a CD-ROM.

→ Remove the disc and turn off the system once, then turn it on again.

C13/REC Error

Recording could not be performed properly.

→ Move the system to a stable place, and start recording over from the beginning.

The MD is dirty or scratched, or the MD does not meet the standards.

→ Replace the MD and start recording over from the beginning.

C13/Read Error

The MD deck cannot read the disc information properly.

→ Remove the MD once, then load it again.

C14/Toc Error

The MD deck cannot read the disc information properly.

→ Replace the MD.

→ Erase all the recorded contents of the MD using All Erase Function (see page 27).

C41/Cannot Copy

The sound source is a copy of commercially available music software.

→ The Serial Copy Management System prevents making a digital copy (see page 47).

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SECTION 1
SERVICING NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

FOR CD

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

FOR MD

NOTES ON LASER DIODE EMISSION CHECK

Never look into the laser diode emission from right above when checking it for adjustment. It is feared that you will lose your sight.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.
VORSICHT : UNSICHTBARE LASERSTRAHLUNG. WENN ABDECKUNG GEÖFFNET UND SICHEREITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.
VARO! : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING : OSYNLING LASERSTRÅLING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
ADVERSEL : USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VIGYAZAT! : A BURKOLAT NYITÁSAKOR LÁTHATATLAN LÉZERSUGÁRVESZÉLY! KERÜLJE A BESUGÁRZÁST!

This caution label is located inside the unit.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage.
Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes.). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

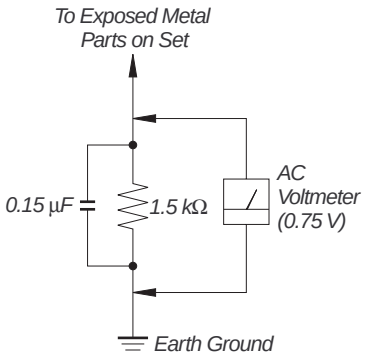


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

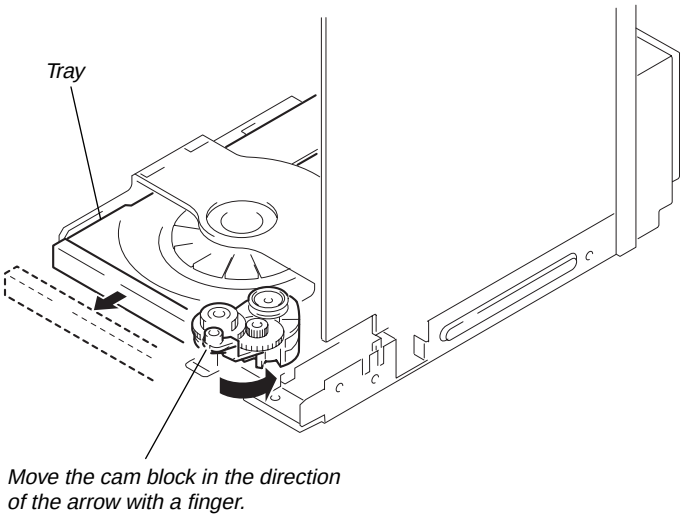
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!
LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

与安全有关的零部件须知

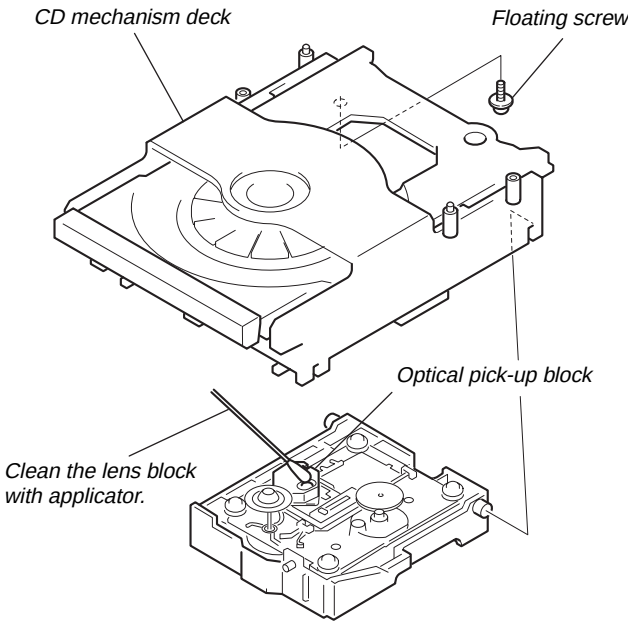
在原理图上用阴影及⚠标记来识别的零部件在安全操作上是具有关键性的。这些零部件要用本手册中所示的部件号对应的索尼零部件进行更换。

在安全操作上具有关键性的电路调整与索尼公司出版的维修手册完全一致。在更换关键零部件时或怀疑动作失常时，请进行这些调整操作。

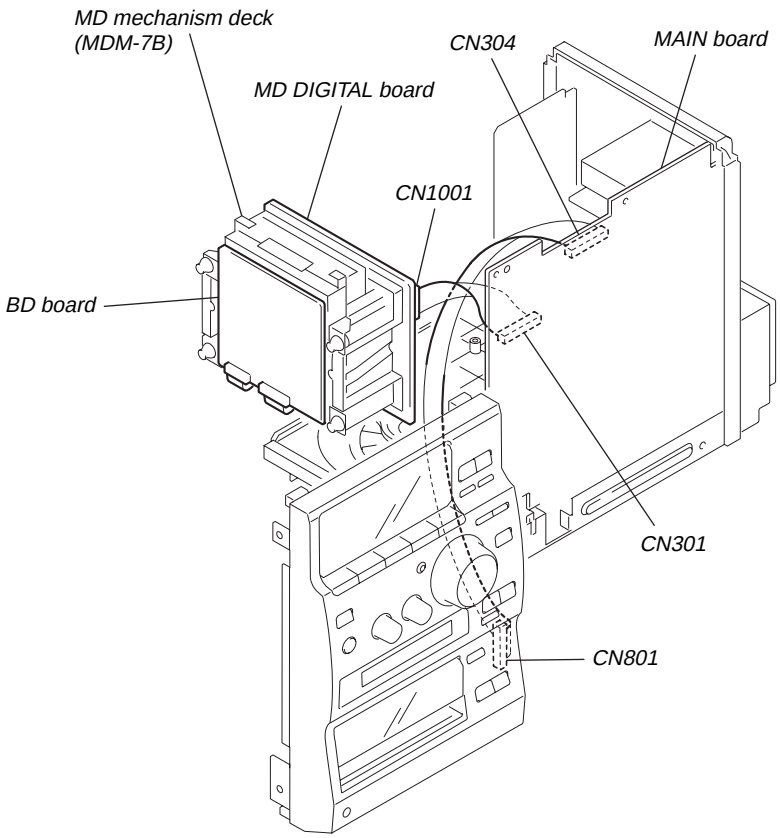
DRAWING OUT THE TRAY DURING POWER OUT



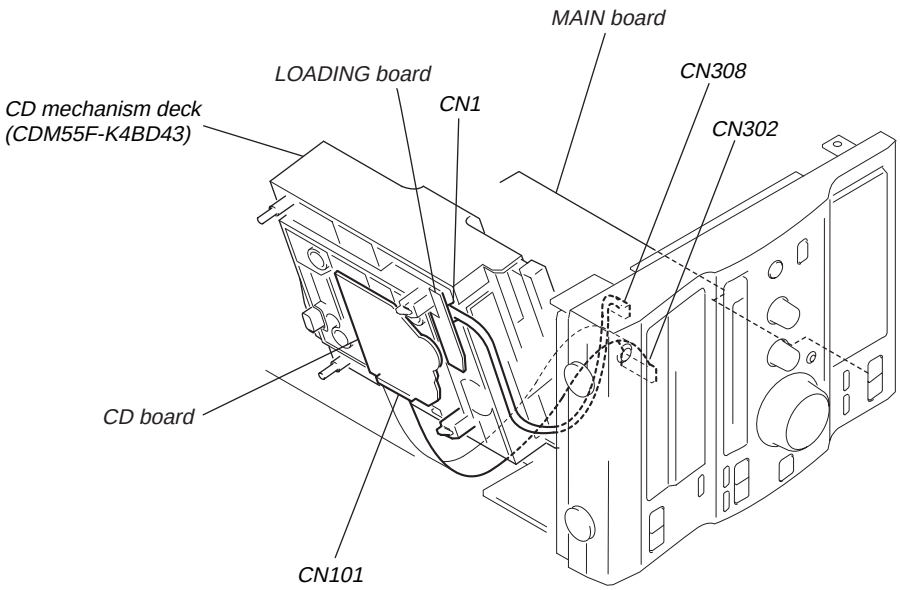
CLEANING THE OPTICAL PICK-UP (CD PLAYER)



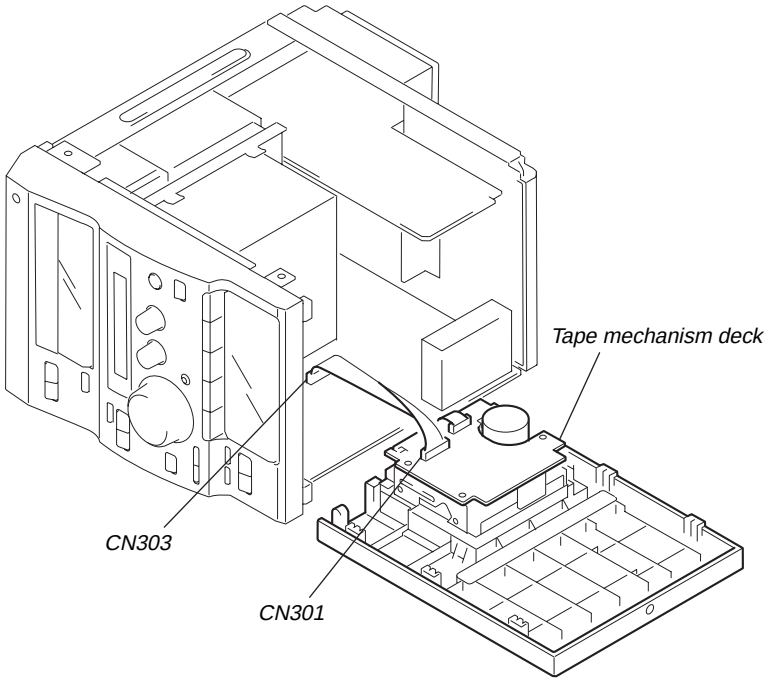
SERVICE POSITION OF THE MD MECHANISM DECK



SERVICE POSITION OF THE CD MECHANISM DECK



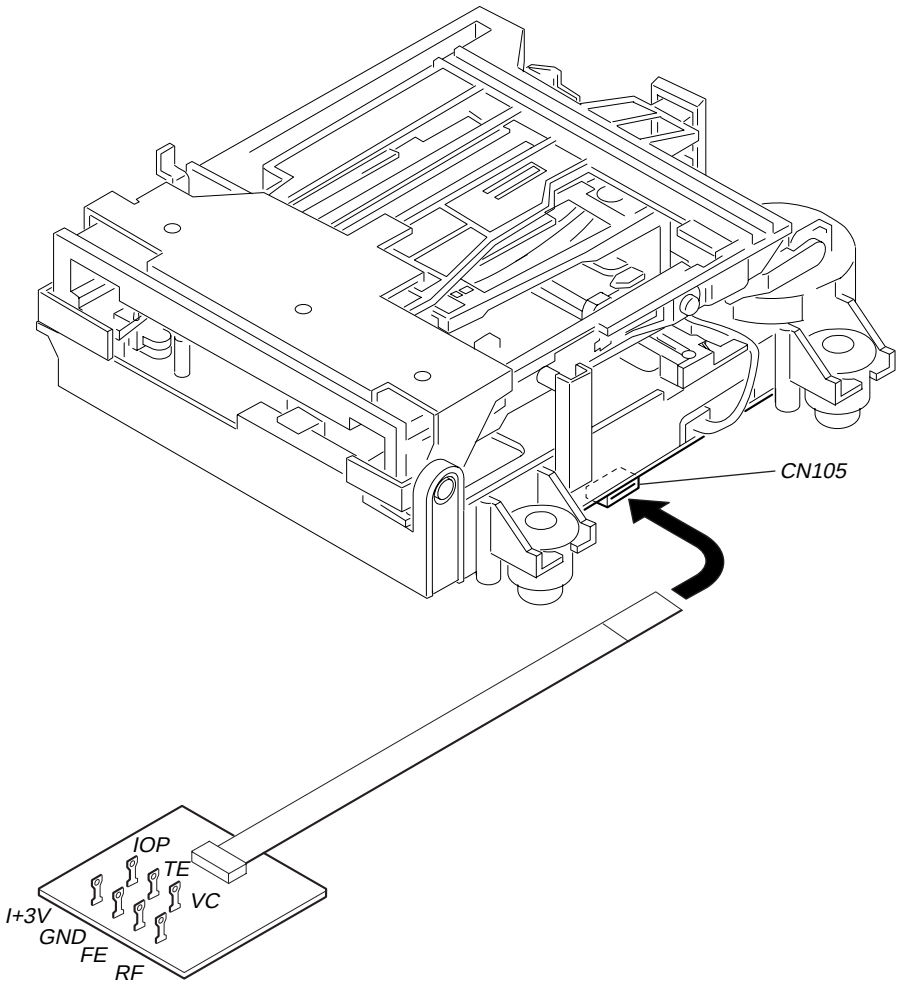
SERVICE POSITION OF THE TAPE MECHANISM DECK

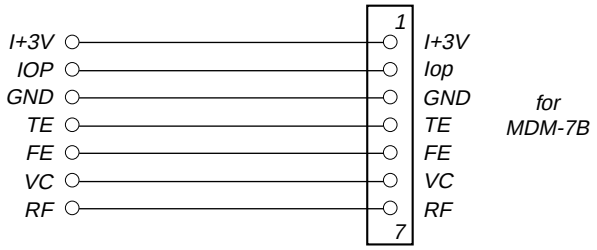


JIG FOR CHECKING BD (MD) BOARD WAVEFORM

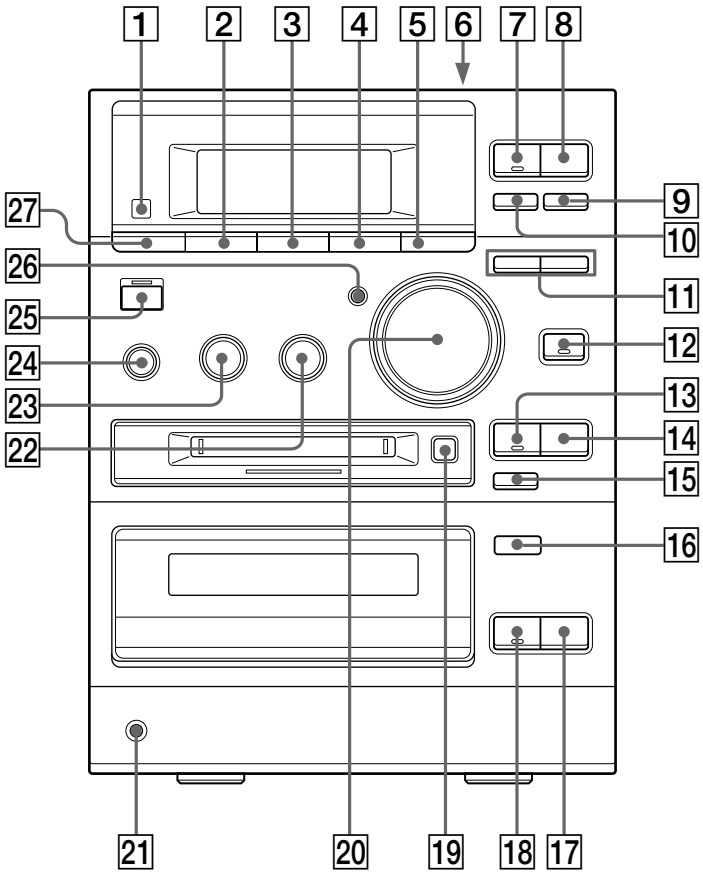
The special jig (J-2501-196-A) is useful for checking the waveform of the BD (MD) board. The names of terminals and the checking items to be performed are shown as follows.

GND : Ground
I+3V : For measuring IOP (Check the deterioration of the optical pick-up laser)
IOP : For measuring IOP (Check the deterioration of the optical pick-up laser)
TE : TRK error signal (Traverse adjustment)
VC : Reference level for checking the signal
RF : RF signal (Check jitter)
FE : Focus error signal





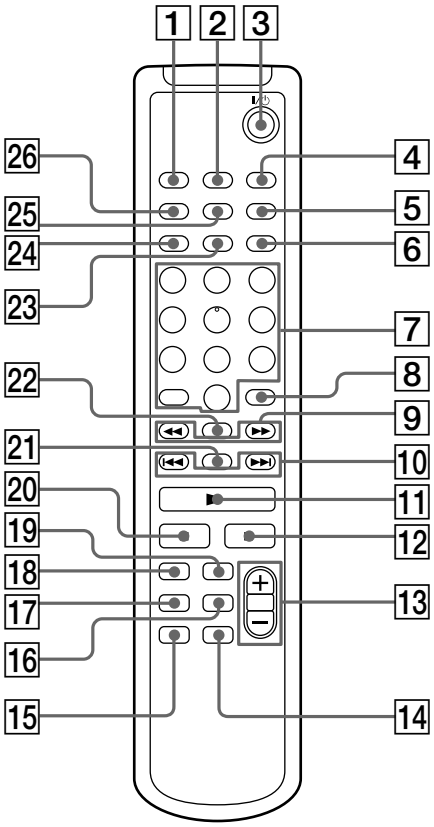
SECTION 2
GENERAL



BASS 23 (40)
CD EJECT ⏏ 16 (8, 9, 16, 50)
CD ■ 17 (9, 10, 17, 38)
CD ▶II 18 (9, 10)
DSG 26 (40)
ENTER/START 5 (17, 18, 38, 39)
FUNCTION 24 (9, 10, 13, 14, 19, 22, 23, 37, 39, 43)
MD EJECT ⏏ 19 (13, 24)
MD REC ● 15 (19, 22, 23)
MD ▶II 13 (13 – 15, 19)
MD ■ 14 (13, 15, 17 – 20, 38, 39)
PHONES jack 21
PLAY MODE DIRECTION 27 (9, 10, 13 – 15, 24, 37 – 39)
PUSH OPEN/CLOSE ⏏ 6 (37)
REC MODE 3 (20, 50)
Remote sensor 1
REPEAT 2 (9, 13, 34)
STEREO/MONO 2 (35)
SYNCHRO 4 (17, 18, 38)
TAPE REC ● 10 (39)
TAPE ◀▶ 7 (37 –39)
TAPE ■ 8 (18, 37 – 39)
TAPE II 9 (37, 39)
TREBLE 22 (40)
TUNER BAND 12 (34, 35, 50)
TUNING MODE 27 (34, 35)
TUNING –/+ 11 (34, 35)
VOLUME 20 (41)

BUTTON DESCRIPTIONS

I◀◀ ▶▶I 11 (9, 10, 13 – 15)
◀◀ ▶▶ 11 (9, 13, 37)
I/⏻ (power) 25 (7, 16, 24, 35, 41, 43, 50)



BASS/TRE 5 (40)
CD 17 (9 – 11)
CLEAR 8 (10, 14, 15, 25, 36)
CLOCK/TIMER SELECT 2 (42, 43)
CLOCK/TIMER SET 4 (7, 41, 42)
CURSOR ←/→ 9 (7, 12, 25)
DISPLAY 21 (8, 10, 11, 15, 19, 36)
DSG 14 (40)
ENTER/YES 6 (7, 10, 12, 14, 20 – 23, 25 – 34, 36, 41 – 43)
FUNCTION 15 (9, 10, 13, 14, 19, 22, 23, 37, 39, 43)
MD 18 (13, 14, 25, 27 – 30, 32)
MENU/NO 24 (12, 21 – 24, 26 – 34)
NAME EDIT/SELECT 23 (11, 12, 24, 25, 36)
Number buttons 7 (9, 10, 12, 14, 15, 25, 35)
PLAY MODE 26 (9, 10, 13 – 15, 24, 32)
REPEAT 25 (9, 13)
SCROLL 22 (12, 15, 26)
SLEEP 1 (40)
TAPE 16
TUNER BAND 19 (34, 35)
VOLUME +/– 13 (41)

BUTTON DESCRIPTIONS

I/⏻ (power) 3 (7, 16, 24, 35, 41, 43)
◀◀ ▶▶ 9 (28, 30)
I◀◀ ▶▶I 10 (7, 11, 12, 21 – 23, 25 – 34, 40 – 42)
► 11 (9, 10, 13, 15, 23)
■ 12 (23)
❚❚ 20 (9, 13, 28)

Setting the time

1 **Turn on the system.**

2 **Press CLOCK/TIMER SET on the remote.**
If you are setting the clock for the first time, go to step 5.

3 **Press I◀◀ or ▶▶I on the remote repeatedly until "CLOCK SET?" appears in the display.**

4 **Press ENTER/YES on the remote.**
The hour indication flashes.

5 **Press I◀◀ or ▶▶I on the remote repeatedly to set the hour.**

6 **Press ENTER/YES or CURSOR→ on the remote.**
The minute indication flashes.

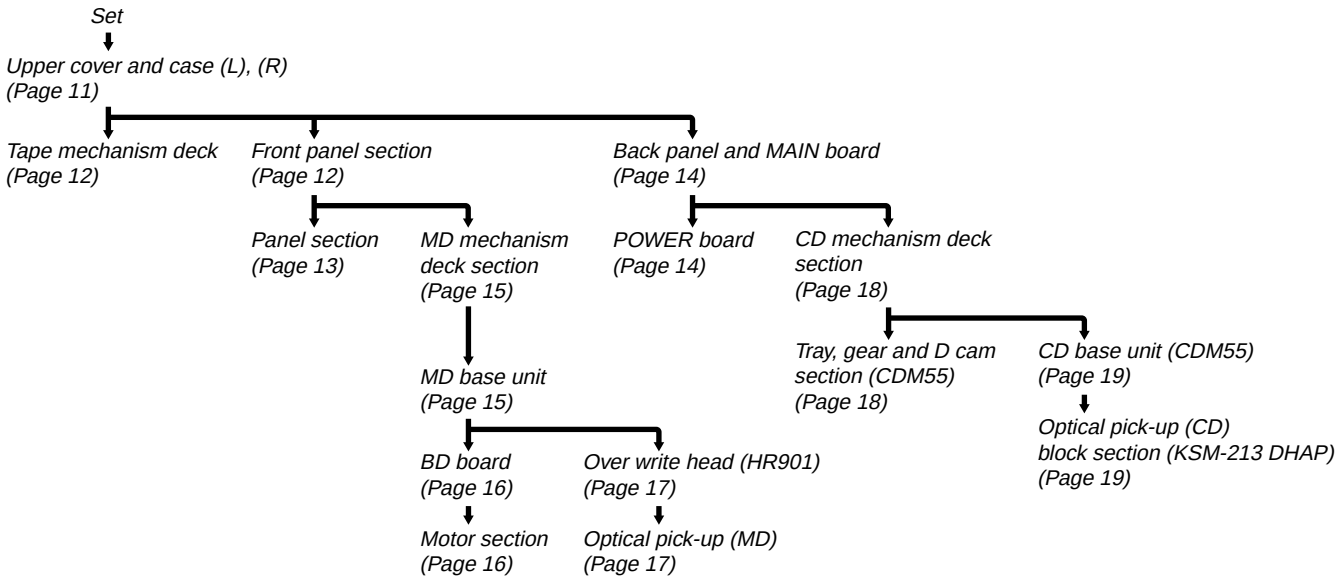
7 **Press I◀◀ or ▶▶I on the remote repeatedly to set the minute.**

8 **Press ENTER/YES on the remote.**
The clock will begin operating.

To reset the system clock
Start over from step 1.

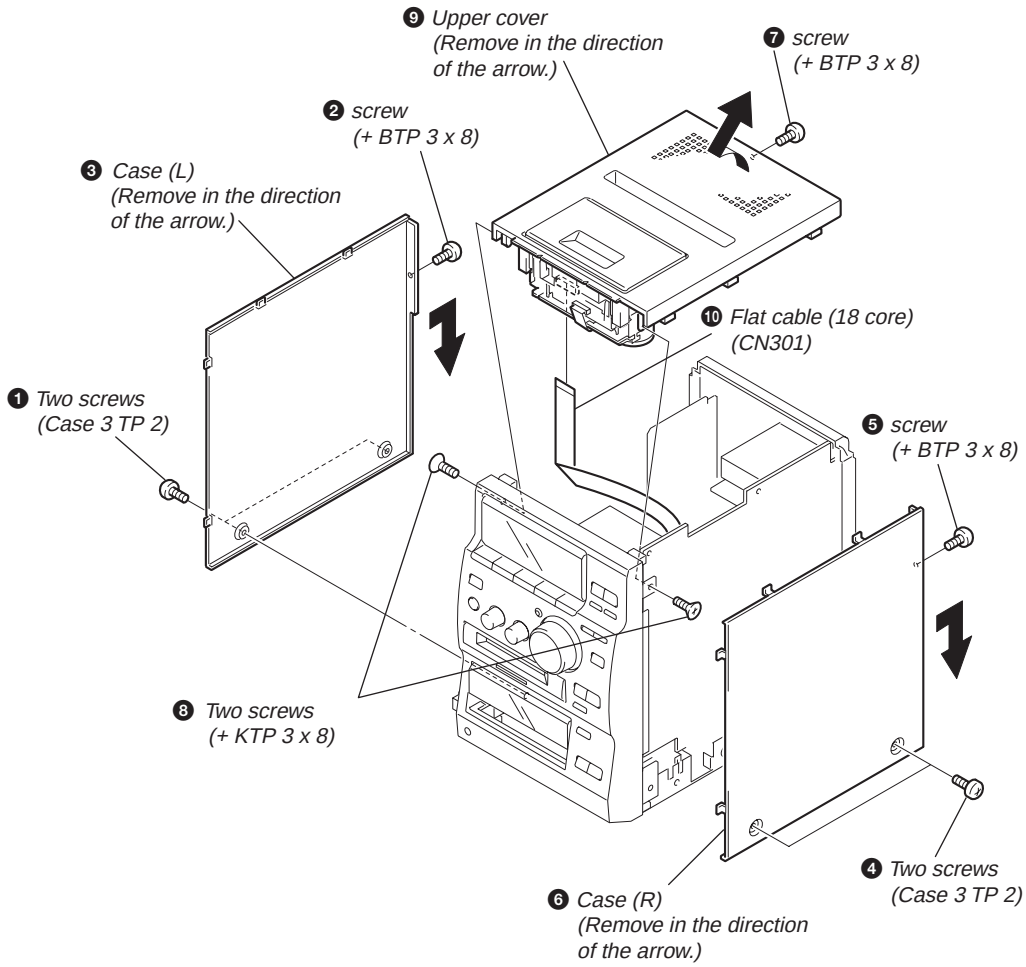
SECTION 3
DISASSEMBLY

• The equipment canbe removed using the following procedure.

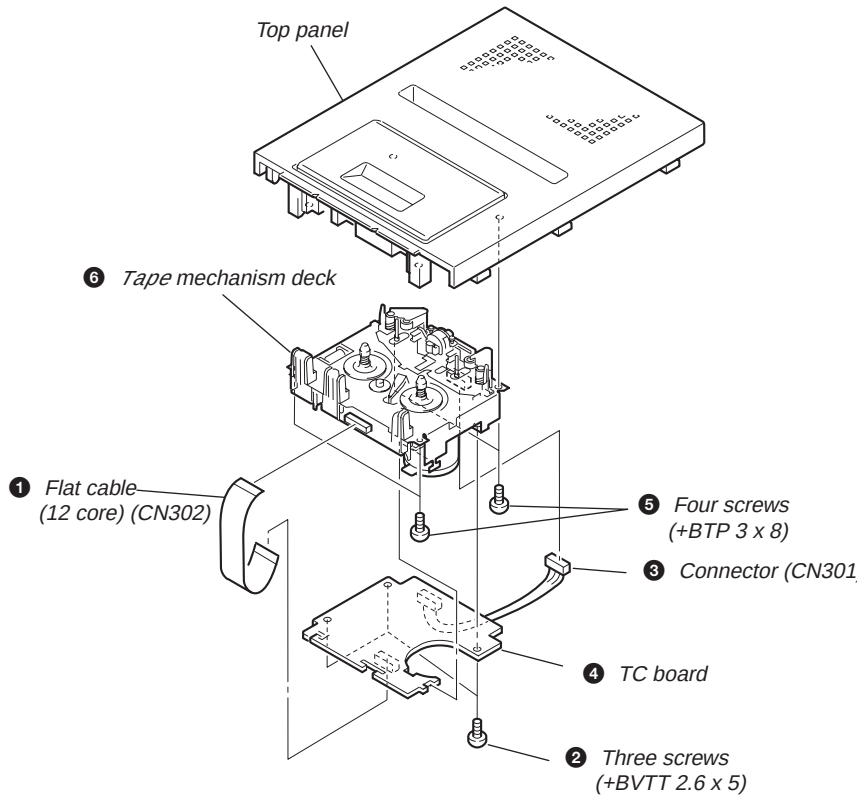

Set
Upper cover and case (L), (R) (Page 11)
Tape mechanism deck (Page 12)
Front panel section (Page 12)
Back panel and MAIN board (Page 14)
Panel section (Page 13)
MD mechanism deck section (Page 15)
POWER board (Page 14)
CD mechanism deck section (Page 18)
MD base unit (Page 15)
Tray, gear and D cam section (CDM55) (Page 18)
CD base unit (CDM55) (Page 19)
BD board (Page 16)
Over write head (HR901) (Page 17)
Optical pick-up (CD) block section (KSM-213 DHAP) (Page 19)
Motor section (Page 16)
Optical pick-up (MD) (Page 17)

Note: Follow the disassembly procedure in the numerical order given.

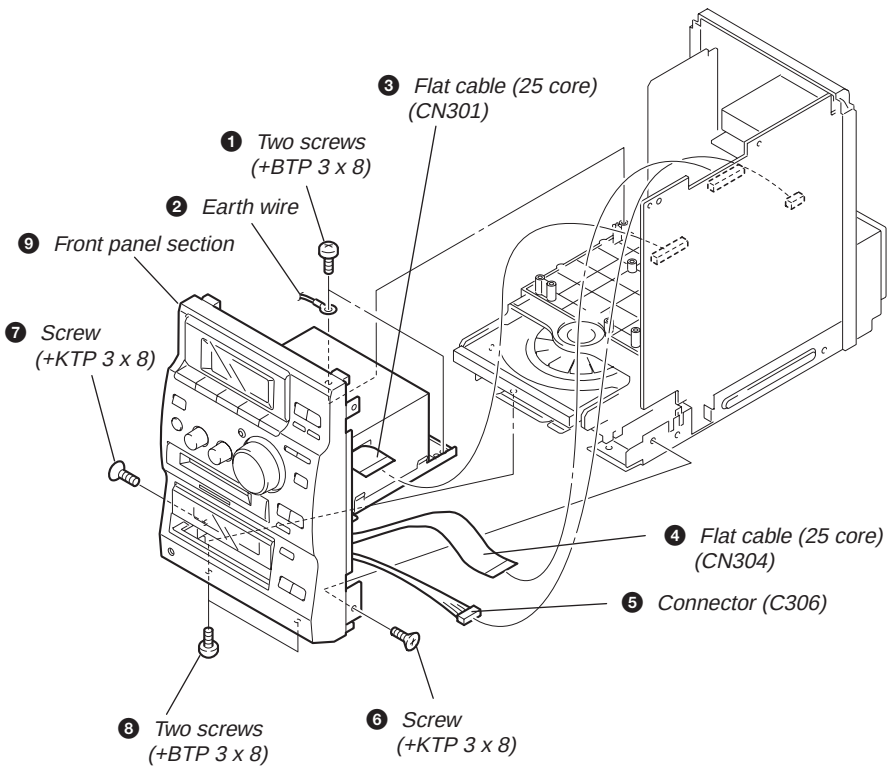
3-1. UPPER COVER AND CASE (L), (R)


❾ Upper cover (Remove in the direction of the arrow.)
❼ screw (+ BTP 3 x 8)
❷ screw (+ BTP 3 x 8)
❸ Case (L) (Remove in the direction of the arrow.)
❿ Flat cable (18 core) (CN301)
❶ Two screws (Case 3 TP 2)
❺ screw (+ BTP 3 x 8)
❽ Two screws (+ KTP 3 x 8)
❹ Two screws (Case 3 TP 2)
❻ Case (R) (Remove in the direction of the arrow.)

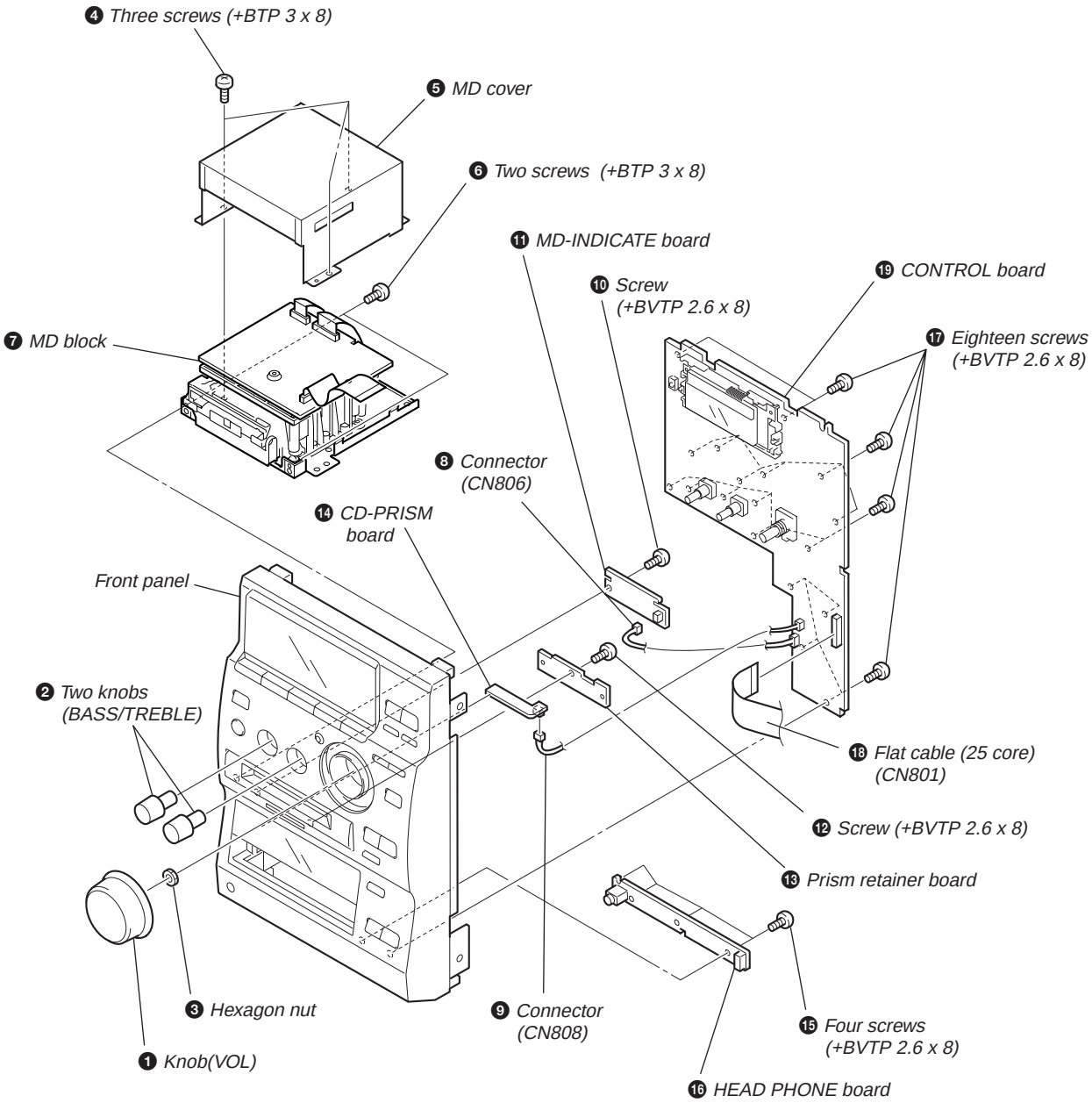
3-2. TAPE MECHANISM DECK


Top panel
❻ Tape mechanism deck
❶ Flat cable (12 core) (CN302)
❺ Four screws (+BTP 3 x 8)
❸ Connector (CN301)
❹ TC board
❷ Three screws (+BVTT 2.6 x 5)

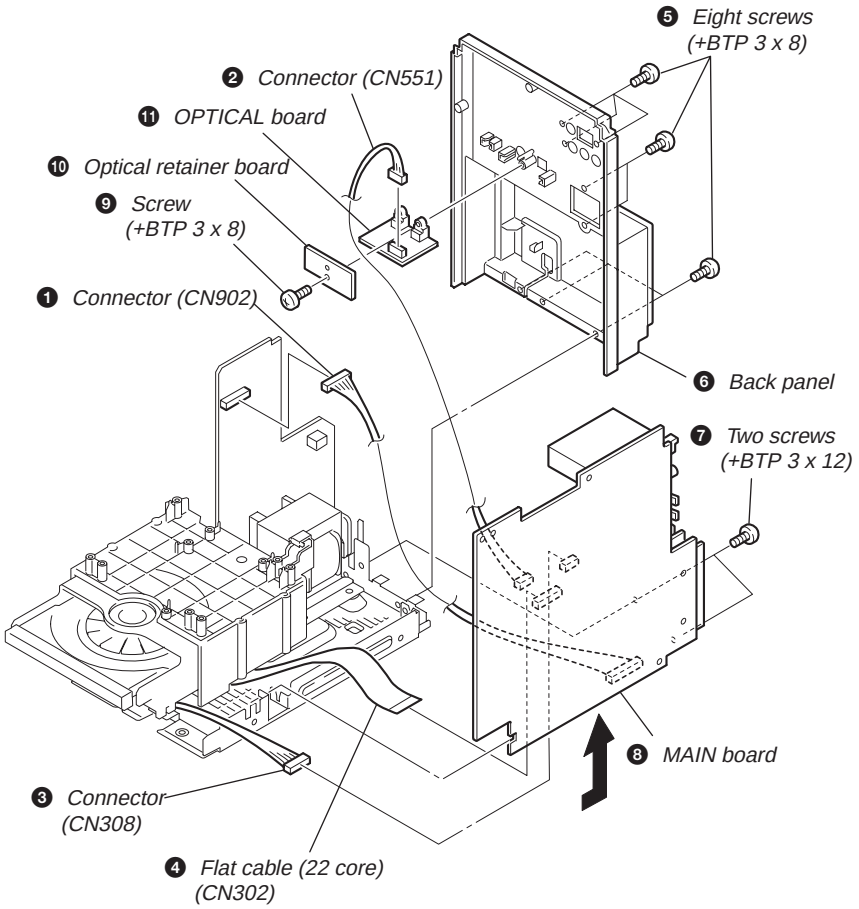
3-3. FRONT PANEL SECTION


❸ Flat cable (25 core) (CN301)
❶ Two screws (+BTP 3 x 8)
❷ Earth wire
❾ Front panel section
❼ Screw (+KTP 3 x 8)
❹ Flat cable (25 core) (CN304)
❺ Connector (C306)
❽ Two screws (+BTP 3 x 8)
❻ Screw (+KTP 3 x 8)

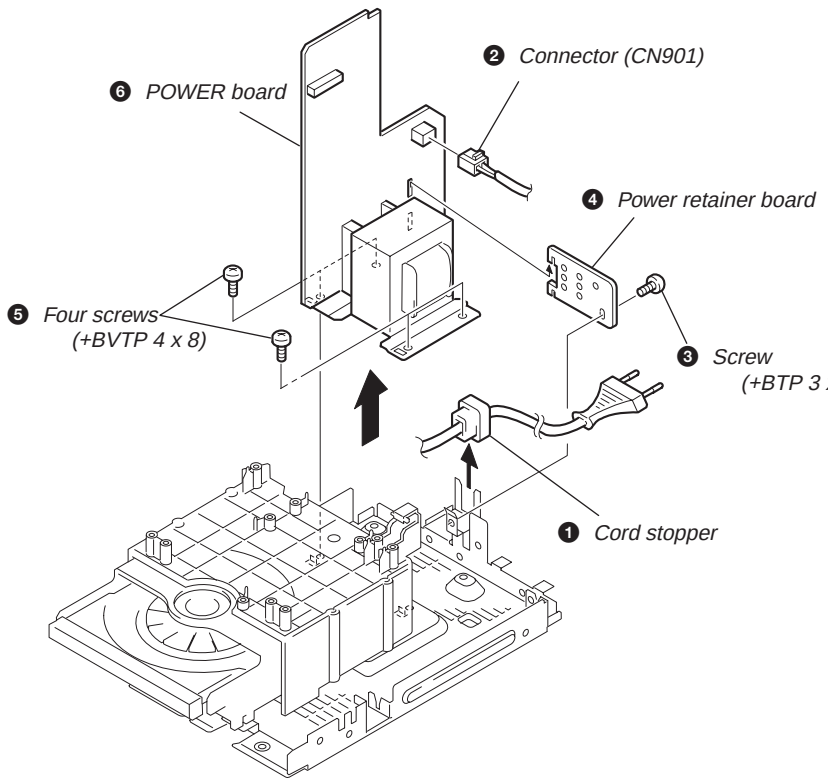
3-4. PANEL SECTION


❹ Three screws (+BTP 3 x 8)
❺ MD cover
❻ Two screws (+BTP 3 x 8)
❼ MD block
❶ Knob(VOL)
❷ Two knobs (BASS/TREBLE)
❸ Hexagon nut
❽ Connector (CN806)
❾ Connector (CN808)
❿ Screw (+BVTP 2.6 x 8)
⓫ MD-INDICATE board
⓬ Screw (+BVTP 2.6 x 8)
⓭ Prism retainer board
⓮ CD-PRISM board
⓯ Four screws (+BVTP 2.6 x 8)
⓰ HEAD PHONE board
⓱ Eighteen screws (+BVTP 2.6 x 8)
⓲ Flat cable (25 core) (CN801)
⓳ CONTROL board
Front panel

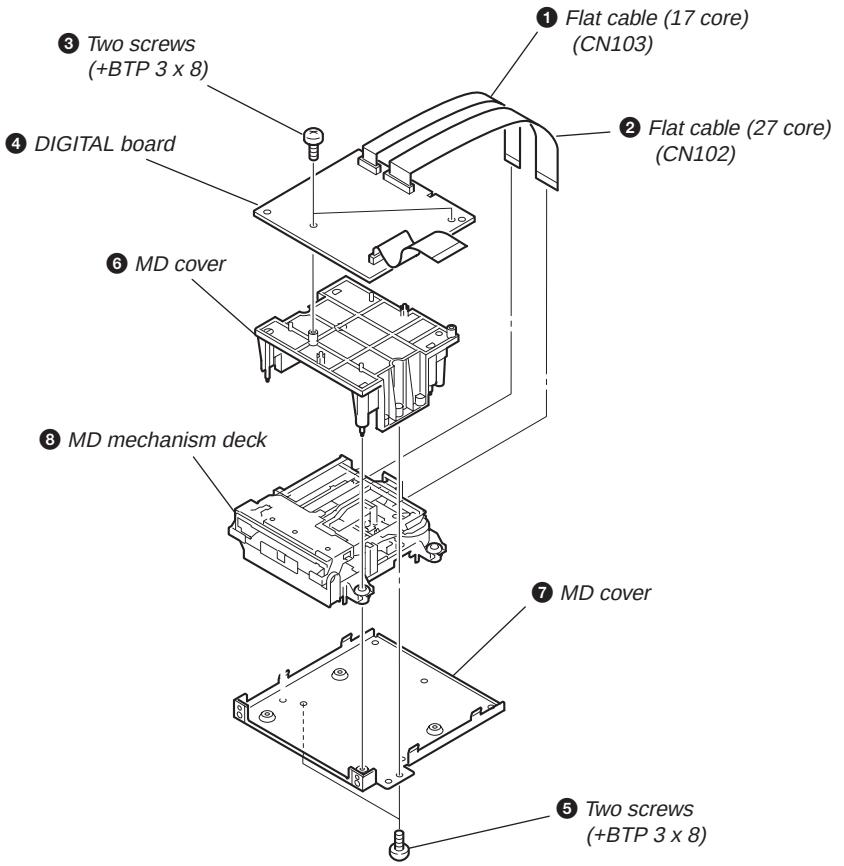
3-5. BACK PANEL AND MAIN BOARD


❺ Eight screws (+BTP 3 x 8)
❷ Connector (CN551)
⓫ OPTICAL board
⓾ Optical retainer board
❾ Screw (+BTP 3 x 8)
❶ Connector (CN902)
❻ Back panel
❼ Two screws (+BTP 3 x 12)
❽ MAIN board
❸ Connector (CN308)
❹ Flat cable (22 core) (CN302)

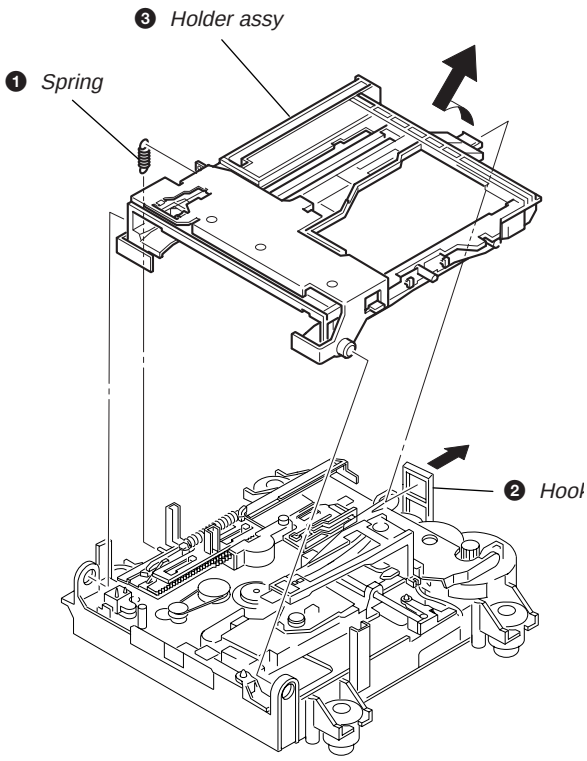
3-6. POWER BOARD



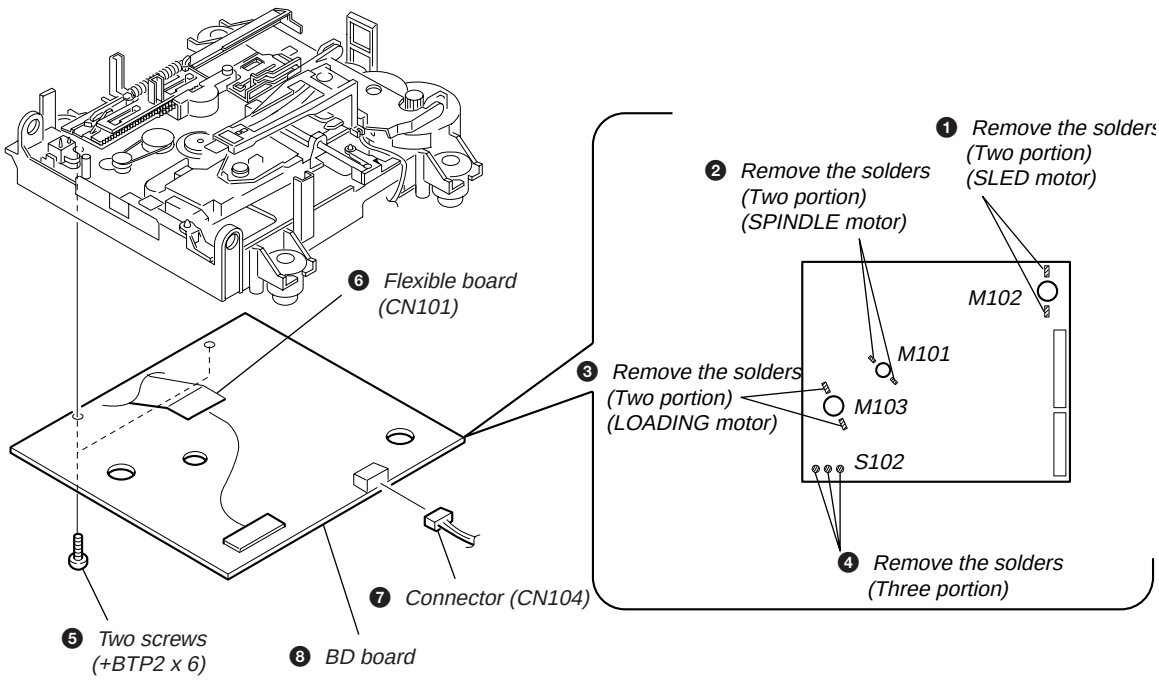
3-7. MD MECHANISM DECK SECTION



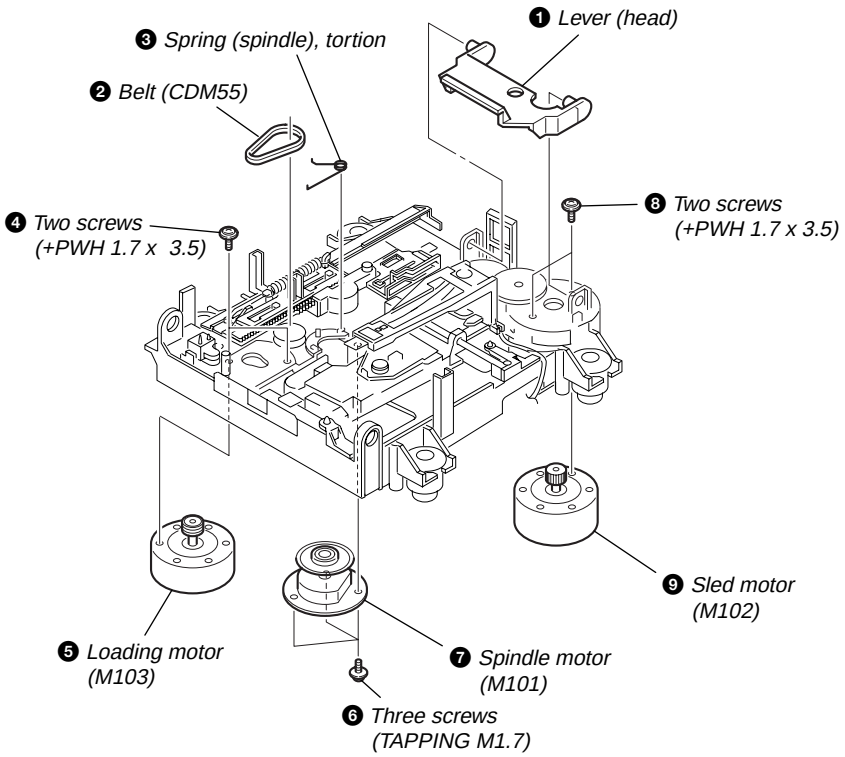
3-8. MD BASE UNIT



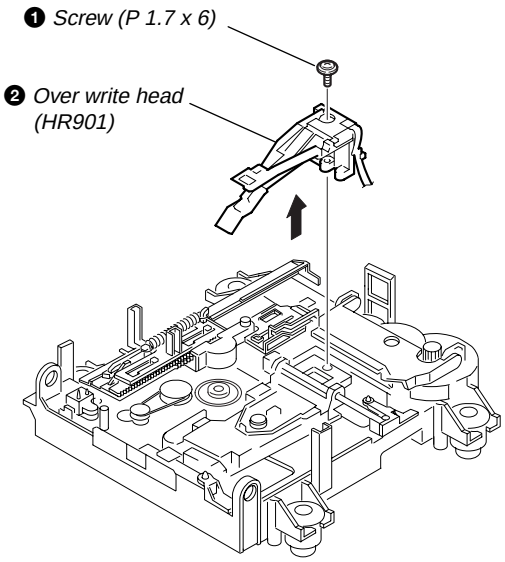
3-9. BD BOARD



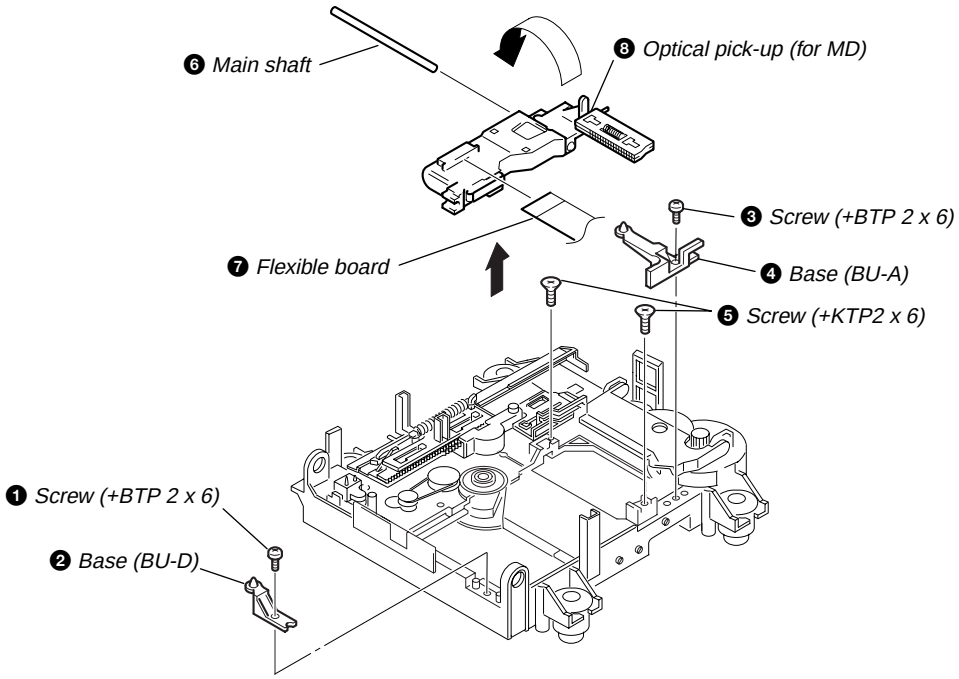
3-10. MOTOR SECTION



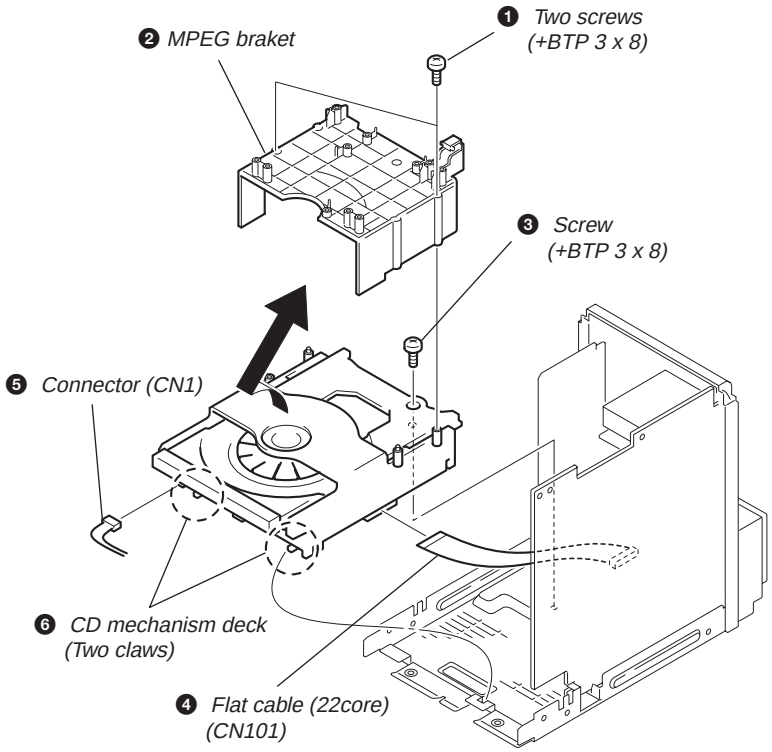
3-11. OVER WRITE HEAD (HR901)



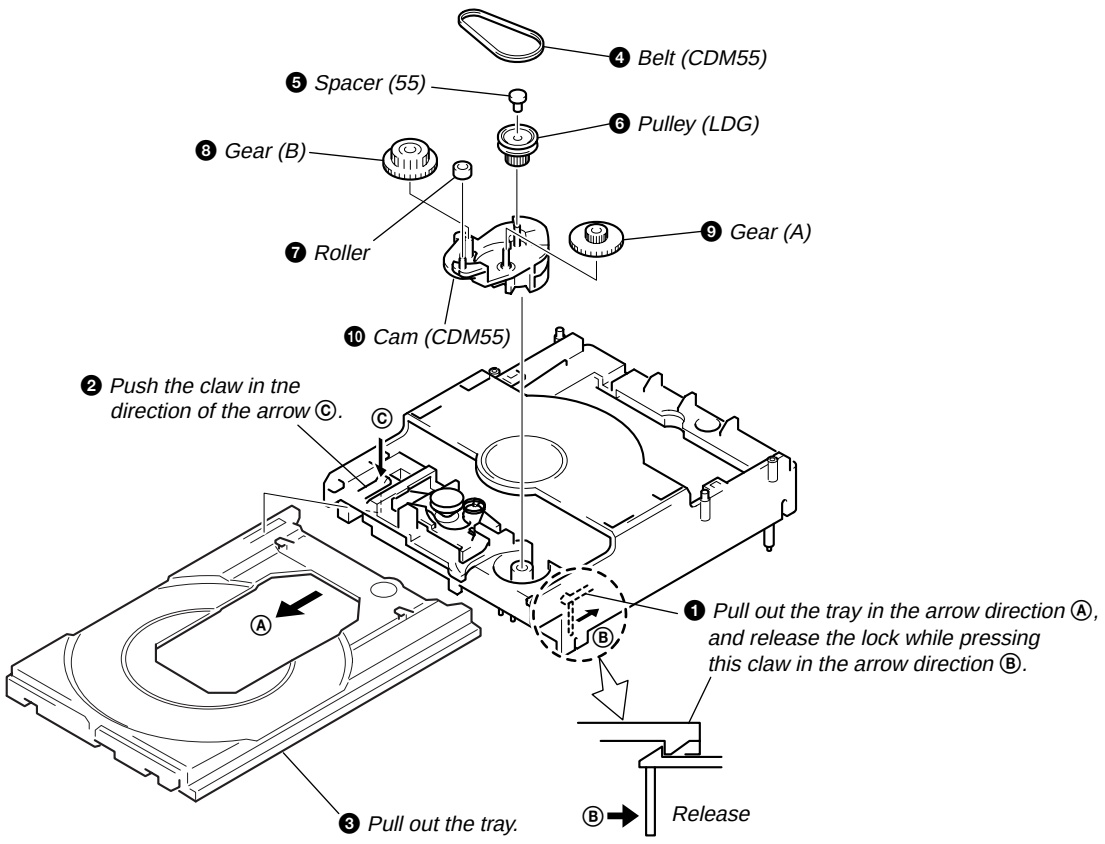
3-12. OPTICAL PICK-UP (MD)



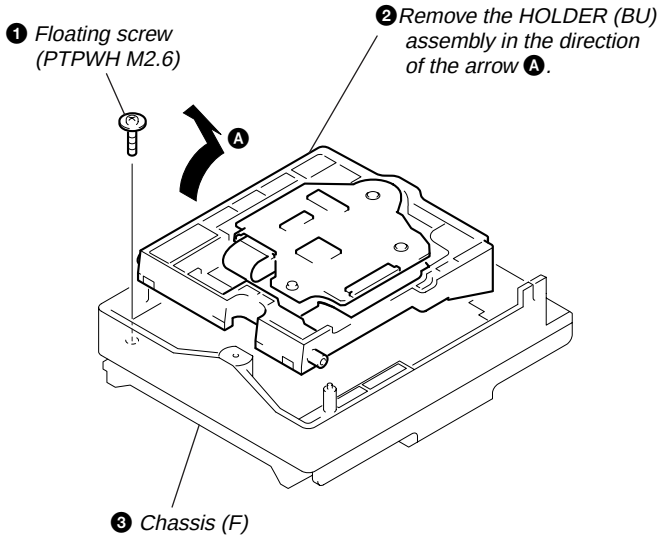
3-13. CD MECHANISM DECK SECTION



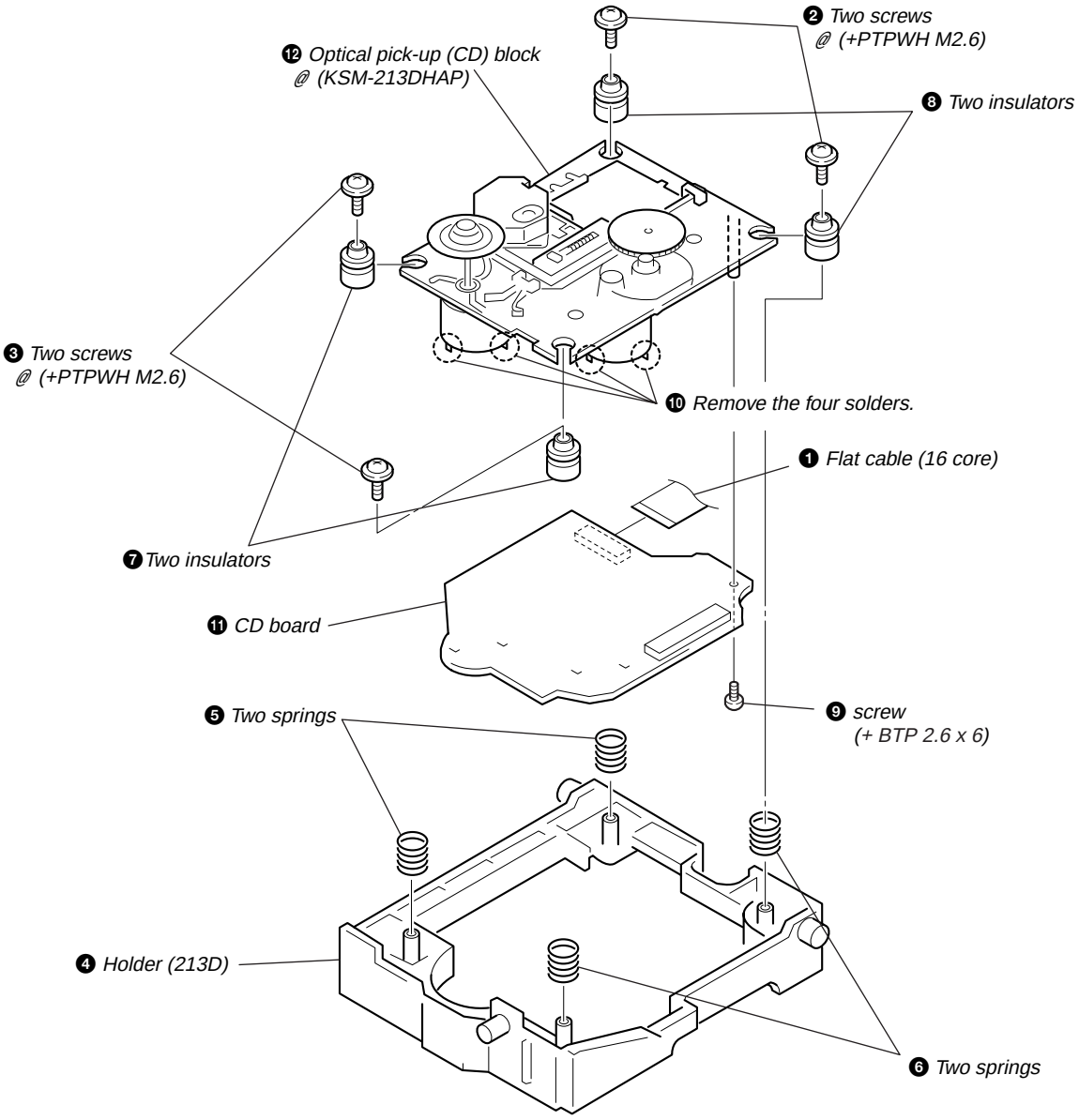
3-14. TRY, GEAR AND D CAM SECTION (CDM55)


❹ Belt (CDM55)
❺ Spacer (55)
❻ Pulley (LDG)
❽ Gear (B)
❾ Gear (A)
❼ Roller
❿ Cam (CDM55)
❷ Push the claw in tne direction of the arrow Ⓒ.
Ⓒ
Ⓐ
Ⓑ
❶ Pull out the tray in the arrow direction Ⓐ, and release the lock while pressing this claw in the arrow direction Ⓑ.
❸ Pull out the tray.
Ⓑ Release

3-15. CD BASE UNIT (CDM55)



3-16. OPTICAL PICK-UP (CD) BLOCK SECTION (KSM-213DHAP)


❷ Two screws @ (+PTPWH M2.6)
⓬ Optical pick-up (CD) block @ (KSM-213DHAP)
❽ Two insulators
❸ Two screws @ (+PTPWH M2.6)
❿ Remove the four solders.
❶ Flat cable (16 core)
❼ Two insulators
⓫ CD board
❺ Two springs
❾ screw (+ BTP 2.6 x 6)
❹ Holder (213D)
❻ Two springs

SECTION 4
TEST MODE

Note 1: About "R"
As this unit has only a few buttons, some operations require the use of remote commander (RM-SCP500/provided with unit: 1-476-754-11) buttons. These operations are indicated as "R" in this manual.
Example: MENU/NO "R"...Press the MENU/NO button of the remote commander.
Note 2: Incorrect operations may be performed if the MD test mode is not entered properly.
In this case, press the I/⏻ button to turn the power off, and retry to enter the MD test mode.

[Cold Reset]

- The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customers.

Procedure:

1. Press I/⏻ button to turn the set ON.
2. Press three buttons BAND , REC MODE and ⏏(CD) simultaneously.
3. Press I/⏻ button again, the LCD displays "Initialize" and the set is reset.

- Initialized conditions
  FUNCTION : TUNER FM 87.5MHz
  VOLUME : MIN
  DSG : ON

[PANEL Test Mode]

- This mode is used to check the software version, LCD, LED and keyboard.

Procedure:

1. Press three bottons ■(TAPE) , REC MODE and ⏏(CD) simultaneously.
2. LEDs and LCD are all turned on.
3. When you want to enter the software version display mode, press REPEAT/STEREO/MONO.The model name and destination are displayed and "MD" and "CD" segments flash.
4. Each time REPEAT/STEREO/MONO is pressed, the display changes MC, GC, CD, CDD, CDMA,CDMB, BDA, BDB, ST, TA, TM, TC and MD in this order, and returns to the top of the version display.
5. When REC MODE is pressed while the version numbers are being displayed, year, month and day of the software creation appear. When REC MODE is pressed again, the display returns to the software version display. When REPEAT/STEREO/MONO is pressed while year, month and day of the software creation are being displayed, the year, month and day of creation of the software versions are displayed in the same order of version display.
6. Press PLAYMODE/DIRECTION button, and the key check mode is activated. In the key check mode, the LCD displays "K 0 J 0 V 0". Each time a button is pressed, "K 0" value increases. However, once a button is pressed, it is no longer taken into account. "J 0" value increases like 1, 2, 3.... if rotating BASS or TREBLE knob clockwise, or it decreases like 0, 9, 8.... if rotating counter-clockwise. "V 0" value increases like 1, 2, 3.... if rotating VOLUME knob clockwise, or it decreases like 0, 9, 8.... if rotating counter-clockwise.
7. To exit from this mode, press three buttons in the same manner as step 1, or disconnect the power cord.

[MC Test Mode]

- This mode is used to check operations of the respective sections of Amplifier, Tuner, CD and Tape.

Procedure:

1. Press the I/⏻ button to turn on the set.
2. Press the three buttons ■(TAPE), REC MODE and ● REC (MD) simultaneously.
3. The "MD" and "TAPE" segments flash.
4. When the VOLUME knob is rotated clockwise even slightly, the sound volume increases to its maximum and a message "VOLUME MAX" appears for two seconds. then the display returns to the original display.
5. When the VOLUME knob is rotated counter-clockwise even slightly, the sound volume decreases to its minimum and a message "VOLUME MIN" appears for two seconds, then the display returns to the original display.
6. To exit from this mode, press three button BAND , REC MODE and ⏏(CD) (TAPE) simultaneously or disconnect the power cord.

MD SECITON

1. PRECAUTIONS FOR USE OF TEST MODE

- As operations related to loading will be performed regardless of the test mode operations being performed, be sure to check that the disc is stopped before setting and removing it.
  Even if the ⏏(MD) button is pressed while the disc is rotating during continuous playback, continuous recording, etc., the disc will not stop rotating.
  Therefore, it will be ejected while rotating.
  Be sure to press the ⏏(MD) button after pressing the MENU/NO "R" button and the rotation of disc is stopped.

1-1. Recording laser emission mode and operating buttons

- Continuous recording mode (CREC 1MODE)
- Laser power check mode (LDPWR CHECK)
- Laser power adjustment mode (LDPWR ADJUST)
- Comparison with initial Iop value written in nonvolatile memory (Iop Compare)
- Write current Iop value in read nonvolatile memory using microprocessor (Iop NV Save)
- Traverse (MO) check (EF MO CHECK)
- Traverse (MO) adjustment (EF MO ADJUST)
- When pressing the ● MD button.

2. SETTING THE TEST MODE

The following are two methods of entering the test mode.

Procedure : 1. Press the I/⏻ button to turn the power on.
2. Press the FUNCTION button to set the MD function.
3. Press three buttons of ENTER/START, ▶▶I, and ● REC (MD) simultaneously.
When the test mode is set, "[Check]" will be displayed. Pressing the I◀◀ "R" or ▶▶I "R" button between the following three groups; ⋯ ⟷ [Check] ⟷ [Service] ⟷ [Develop] ⟷ ⋯.

Note: Do not use the test mode in the [Develop] group.
If used, the unit may not operate normally.
If the [Develop] group is set accidentally, press the MENU/NO "R" button immediately to exit the [Develop] group.

3. RELEASING THE TEST MODE

Press the REPEAT STEREO/MONO button twice to display "Initialize", then release the MD test mode.

4. BASIC OPERATIONS OF THE TEST MODE

All operations are performed using the I◀◀ "R", ▶▶I "R", ENTER/YES "R" and MENU/NO "R".
The functions of these buttons are as follows.

Function name	Function
I◀◀ "R", ▶▶I "R" buttons	Changes parameters and modes
ENTER/YES "R" button	Proceeds onto the next step. Finalizes input
MENU/NO "R" button	Returns to previous step. Stops operations

5. SELECTING THE TEST MODE

There are 26 types of test modes as shown below. The groups can be switched by pressing the ⏮ "R" or ⏭ "R" button. After selecting the group to be used, press the ENTER/YES "R" button. After setting a certain group, pressing the ⏮ "R" or ⏭ "R" button switches modes shown below.
Refer to "Group" in the table for details can be selected.
All items used for servicing can be treated using group [Service]. So be carefully not to enter other groups by mistake.

Note: Do not use the test mode in the [Develop] group.
If used, the unit may not operate normally.
If the [Develop] group is set accidentally, press the MENU/NO "R" button immediately to exit the [Develop] group.

Display	No.	Details	Mark	Group	
				Check	Service
AUTO CHECK	C01	Automatic self-diagnosis			○
Err Display	C02	Error history display, clear			○
TEMP ADJUST	C03	Temperature compensation offset adjustment			○
LDPWR ADJUST	C04	Laser power adjustment			○
Iop Write	C05	Iop data writing			○
Iop NV Save	C06	Writes current Iop value in read nonvolatile memory using microprocessor			○
EF MO ADJUST	C07	Traverse (MO) adjustment			○
EF CD ADJUST	C08	Traverse (CD) adjustment			○
FBIAS ADJUST	C09	Focus bias adjustment			○
AG Set (MO)	C10	Auto gain output level adjustment (MO)			○
AG Set (CD)	C11	Auto gain output level adjustment (CD)			○
TEMP CHECK	C12	Temperature compensation offset check		○	○
LDPWR CHECK	C13	Laser power check		○	○
EF MO CHECK	C14	Traverse (MO) check		○	○
EF CD CHECK	C15	Traverse (CD) check		○	○
FBIAS CHECK	C16	Focus bias check		○	○
ScurveCHECK	C17	S-curve check	×	○	
VERIFYMODE	C18	Nonvolatile memory check	×	○	
DETRK CHECK	C19	Detrack check	×	○	
0920 CHECK	C25	Most circumference check	×	○	
Iop Read	C26	Iop data display		○	○
Iop Compare	C27	Comparison with initial Iop value written in nonvolatile memory		○	○
ADJ CLEAR	C28	Initialization of nonvolatile memory for adjustment values			○
INFORMATION	C31	Display of microprocessor version, etc.		○	○
CPLAY 1MODE	C34	Continuous playback mode		○	○
CREC 1MODE	C35	Continuous recording mode		○	○

- For details of each adjustment mode, refer to "5. Electrical Adjustments".
  For details of "Err Display", refer to "Self-Diagnosis Function" on page 3.
- If a different mode has been selected by mistake, press the MENU/NO "R" button to release that mode.
- Modes with (×) in the Mark column are not used for servicing and therefore are not described in detail. If these modes are set accidentally, press the MENU/NO "R" button to release the mode immediately.

5-1. Operating the Continuous Playback Mode

1. Entering the continuous playback mode

(1) Set the disc in the unit. (Whichever recordable discs or discs for playback only are available)
(2) Press the [I◄◄ "R"] or [►►I "R"] button to display "CPLAY 1MODE" (C34).
(3) Press the [ENTER/YES "R"] button to change the display to "CPLAY1MID".
(4) When access completes, the display changes to "C = □□□□□ AD = □□)".
Note: The numbers "□" displayed show you error rates and ADER.

2. Changing the parts to be played back

(1) Press the [ENTER/YES "R"] button during continuous playback to change the display as below.

"CPLAY 1MID" → "CPLAY 1OUT" → "CPLAY 1IN"

When pressed another time, the parts to be played back can be moved.
(2) When access completes, the display changes to "C = □□□□□ AD = □□)".
Note: The numbers "□" displayed show you error rates and ADER.

3. Ending the continuous playback mode

(1) Press the [MENU/NO "R"] button. The display will change to "CPLAY 1MODE" (C34).
(2) Press the [⏏](MD) button and take out the disc.
Note: The playback start addresses for IN, MID, and OUT are as follows.
IN : 40h cluster
MID : 300h cluster
OUT : 700h cluster

5-2. Operating the Continuous Recording Mode (Use only when performing self-recording/palyback check)

1. Entering the continuous recording mode

(1) Set a recordable disc in the unit.
(2) Press the [I◄◄ "R"] or [►►I "R"] button to display "CREC 1MODE" (C35).
(3) Press the [ENTER/YES "R"] button to change the display to "CREC 2MID".
(4) When access completes, the display changes to "CREC (1□□□□□)" and "REC" is displayed.
Note: The numbers "□" displayed shows you the recording position addresses.

2. Changing the parts to be recorded

(1) When the [ENTER/YES "R"] button is pressed during continuous recording, the display changes as below.

"CREC 1MID" → "CREC 1OUT" → "CREC 1IN"

When pressed another time, the parts to be recorded can be changed. "REC" goes off.
(2) When access completes, the display changes to "CREC (1□□□□□)" and "REC" is displayed.
Note: The numbers "□" displayed shows you the recording position addresses.

3. Ending the continuous recording mode

(1) Press the [MENU/NO "R"] button. The display changes to "CREC 1MODE" (C35) and "REC" goes off.
(2) Press the [⏏](MD) button and take out the disc.
Note 1: The recording start addresses for IN, MID, and OUT are as follows.
IN : 40h cluster
MID : 300h cluster
OUT : 700h cluster
Note 2: The [MENU/NO "R"] button can be used to stop recording anytime.
Note 3: Do not perform continuous recording for long periods of time above 5 minutes.
Note 4: During continuous recording, be careful not to apply vibration.

6. FUNCTIONS OF OTHER BUTTONS

Function	Contents
► II MD	Sets continuous playback when this is pressed in the STOP state. When this is pressed during continuous playback, playback position moves.
■ (MD)	Stops continuous playback and continuous recording
►► "R"	The sled moves to the outer circumference only when this is pressed
◄◄ "R"	The sled moves to the inner circumference only when this is pressed
PLAY MODE	Switches the spindle servo mode (CLV S ⟷ CLV A)
REC MODE	Switches the displayed digit each time the button is pressed
MD ⏏	Ejects the disc
REPEAT STEREO/MONO	Releases the test mode

8. AUTOMATIC SELF-DIAGNOSIS FUNCTION

This test mode performs CREC and CPLAY automatically for mainly checking the characteristics of the optical pick-up.
To perform this test mode, the laser power must first be checked.
Perform AUTO CHECK after the laser power check and Iop Compare.

Procedure:

1. Press the I◀◀ "R" or ▶▶I "R" button to display "AUTO CHECK" (C01).
2. Press the ENTER/YES "R" button. If "LDPWR ミチェック" is displayed, it means that the laser power check has not been performed. In this case, perform the laser power check and Iop Compare, and then repeat from enter the MD test mode.
3. If a disc is in the mechanical deck, it will be ejected forcibly.
   "DISC IN" will be displayed in this case. Load a test disc (MDW-74/GA-1) which can be recorded.
4. If a disc is loaded at step 3, the check will start automatically.
5. When "XX CHECK" is displayed, the item corresponding to XX will be performed.
   When "06 CHECK" completes, the disc loaded at step 3 will be ejected. "DISC IN" will be displayed. Load the check disc (TDYS-1).
6. When the disc is loaded in step 5, the check will automatically be resumed from "07 CHECK".
7. After completing to "0C CHECK" of test item 12, check OK or NG will be displayed. If all items are OK, "CHK ALL OK" will be displayed. If any item is NG, it will be displayed as "NG:xxxx".

When "CHK ALL OK" is displayed, it means that the optical pick-up is normal. Check the operations of other parts (spindle motor, sled motor, etc.).
When displayed as "NG:xxxx", it means that the optical pick-up is faulty. In this case, replace the optical pick-up.

9. INFORMATION

Display the software version.

Procedure:

1. Press the I◀◀ "R" or ▶▶I "R" button to display "INFORMATION" (C31).
2. Press the ENTER/YES "R" button.
3. The software version will be displayed.
4. Press the MENU/NO "R" button to end this mode.

10. IOP DATA RECORDING AND DISPLAY WHEN OPTICAL PICK-UP AND NON-VOLATILE MEMORY (IC195 OF BD BOARD) ARE REPLACED

The IOP value labeled on the optical pick-up can be recorded in the non-volatile memory. By recording the value, it will eliminate the need to look at the value on the label of the optical pick-up. When replacing the optical pick-up or non-volatile memory (IC195 of BD (MD) board), record the IOP value on the optical pick-up according to the following procedure.

Record Procedure:

1. Press the I/⏻ button to turn the power on.
2. Press the FUNCTION button to set the MD function.
3. Press three buttons of ENTER/START, ▶▶I and ● REC (MD) simultaneously to enter the MD test mode and display "[Check]".
4. Press the I◀◀ "R" or ▶▶I "R" button to display "[Service]".
5. Press the ENTER/YES "R" button to display "AUTO CHECK", and press the ▶▶I "R" button to display "Iop Write".
6. Press the ENTER/YES "R" button.
7. The display becomes "Ref= @@@.@" (@ is an arbitrary number) and the numbers which can be changed will blink.
8. Input the IOP value written on the optical pick-up.
   To select the number : Press the I◀◀ "R" or ▶▶I "R" button.
   To select the digit : Press the REC MODE button.
9. When the ENTER/YES "R" button is pressed, the display becomes "Measu=@@@.@" (@ is an arbitrary number).
10. As the adjustment results are recorded for the step 9 value. Leave it as it is and press the ENTER/YES "R" button.
11. "Complete!" will be displayed momentarily. The value will be recorded in the non-volatile memory and the display will become "Iop Write".
12. Press the REPEAT STEREO/MONO button twice to complete. "Initialize" will be displayed and release the MD test mode.

Display Precedure:

1. Press the I/⏻ button to turn the power on.
2. Press the FUNCTION button to set the MD function.
3. Press three buttons of ENTER/START, ▶▶I and ● REC (MD) simultaneously to enter the MD test mode and display "[Check]".
4. Press the I◀◀ "R" or ▶▶I "R" button to display "[Service]".
5. Press the ENTER/YES "R" button to display "AUTO CHECK", and press the ▶▶I "R" button to display "Iop Read".
6. Press the ENTER/YES "R" button.
7. "@@.@/##.#" is displayed and the recorded contents are displayed.
   @@.@ : Indicates the Iop value labeled on the pick-up.
   ##.# : Indicates the Iop value after adjustment.
8. Press the REPEAT STEREO/MONO button twice to complete. "Initialize" will be displayed and release the MD test mode.

11. WHEN MEMORY NG IS DISPLAYED

If the nonvolatile memory data is abnormal, "E001 MEMORY NG" will be displayed so that the MD deck does not continue operations. In this case, set the test mode promptly and perform the following procedure.

Procedure:

1. Enter the MD test mode.
2. Normally a message for selecting the test mode will be displayed. However if the nonvolatile memory is abnormal, the following will be displayed "INIT EEP?".
3. Press the ■ (MD) and ⏏ (MD) buttons simultaneously.
4. Press the I◀◀ "R" or ▶▶I "R" button to display "MDM-7B".
5. Press the REC MODE button. If the nonvolatile memory is successfully overwritten, the normal MD test mode will be set and a message to select the MD test mode will be displayed.

12. CHECKS PRIOR TO PARTS REPLACEMENT AND ADJUSTMENTS IN MD

Before performing repairs, perform the following checks to determine the faulty locations up to a certain extent.
Details of the procedures are described in "Section 6 Electrical Adjustments".

	Criteria for Determination (Unsatisfactory if specified value is not satisfied)	**Measure if unsatisfactory**
Laser power check (6-2 : See page 31)	• 0.9 mW power Specified value : figure1 • 7.0 mW power Specified value : figure2	• Clean the optical pick-up • Adjust again • Replace the optical pick-up
	Iop (at 7.0mW) • Labeled on the optical pick-up Iop value ± 10mA	• Replace the optical pick-up
Auto check (6-4 : See page 32)	• Unsatisfactory if displayed as "NG : XXXX"NG (XXXX are arbitrary numbers)	• Replace the optical pick-up
Temperature compensation offset check (6-1 : See page 31)	• Unsatisfactory if displayed as "T=@@ (##) [NG]" NG (@@, ## are both arbitrary numbers)	• Check for disconnection of the circuits around D101 (BD board) • Check the signals around IC101, IC151, CN102, CN103 (BD board)

Note:
The criteria for determination above is intended merely to determine if satisfactory or not, and does not serve as the specified value for adjustments. When performing adjustments, use the specified values for adjustments.

Figure1:

SPECIFIED VALUE	KMS-260B	0.85 to 0.91 mW
	KMS-260E	0.90 to 0.96 mW

Figure2:

SPECIFIED VALUE	KMS-260B	6.8 to 7.2 mW
	KMS-260E	7.0 to 7.5 mW

CD SECITON

[CD SERVO Test Mode]

- Use this mode when checking CD servo.

Procedure:

1. Press I/⏻ button to turn the set ON.
2. Select the function "CD".
3. Press three buttons ❚❚ (TAPE), REC MODE and ⏏ (CD) simultaneously.
4. Press the appropriate button for the following tests.

Button	Function	Button	Function
⏏(CD)	TEST 1	PLAY MODE DIRECTION	TEST 6
■(CD)	TEST 2	▶❚❚(CD)	TEST 7
▶▶I	TEST 3	■(MD)	TEST 8
I◀◀	TEST 4	■(TAPE)	TEST 9
REPEAT/STEREO/MONO	TEST 5		

5. To exit from this mode, turn off the set.

SECTION 5
MECHANICAL ADJUSTMENTS

Precaution

1. Clean the following parts with a denatured alcohol-moistened swab:
   - record/playback heads
   - erase head
   - capstan
   - pinch rollers
   - rubber belts
   - idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	3.04 – 6.96 N • m (31 to 71 g • cm) (0.43 – 0.98 oz • inch)
FWD back tension	CQ-102C	0.20 – 0.58 N • m (2 to 6 g • cm) (0.02 – 0.08 oz • inch)
REV	CQ-102RC	3.04 – 6.96 N • m (31 to 71 g • cm) (0.43 – 0.98 oz • inch)
REV back tension	CQ-102RC	0.20 – 0.58 N • m (2 to 6 g • cm) (0.02 – 0.08 oz • inch)
FF/REW	CQ-201B	6.97 – 14.02 N • m (71 to 143 g • cm) (0.98 – 1.99 oz • inch)
FWD tension	CQ-403A	0.98 N • m or more (100 g or more) (3.53 oz or more)
REV tension	CQ-403R	0.98 N • m or more (100 g or more) (3.53 oz or more)

SECTION 6
ELECTRICAL ADJUSTMENTS

DECK SECTION **0 dB=0.775V**

1. Demagnetize the record/playback head with a head demagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjusted.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.
7. Switches and controls should be set as follows unless otherwise specified.

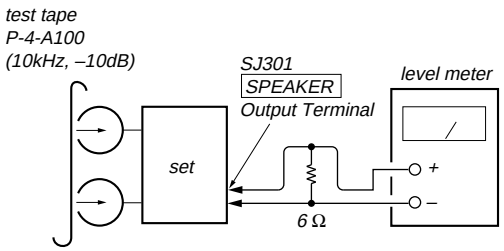
Tape	Signal	Used for
P-4-A100	10 kHz, –10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

Note: Standard Volume Point is +10 dBs at SPEAKER Output Level (6Ω load resistance) during playbacking P-4-L300 Test Tape. (DSG OFF, TREBLE/BASS CENTER)

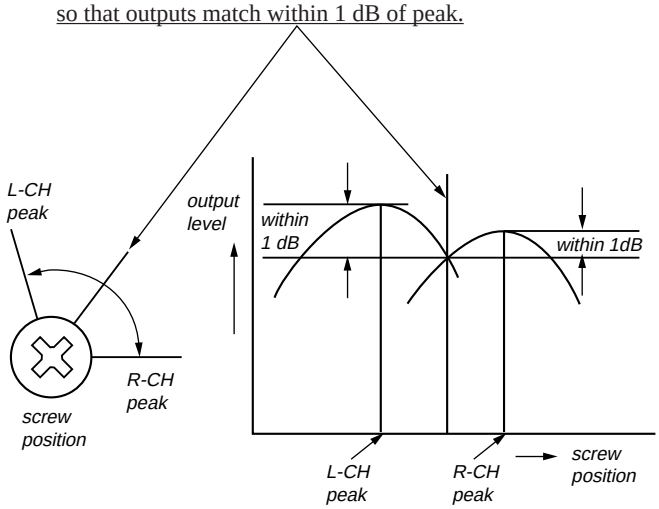
Record/Playback Head Azimuth Adjustment

Procedure:

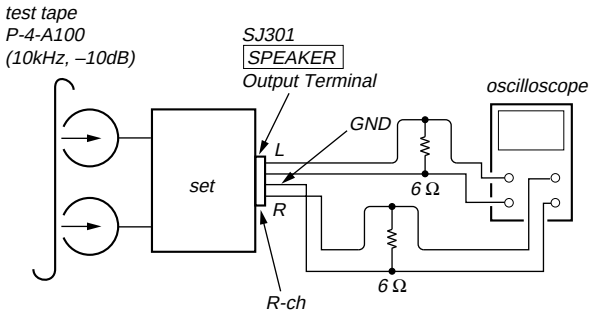
1. Mode : Playback

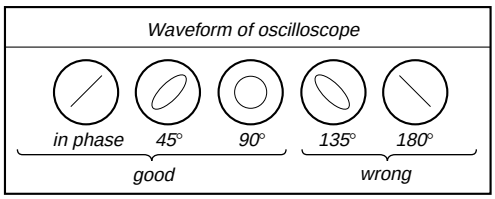


2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.



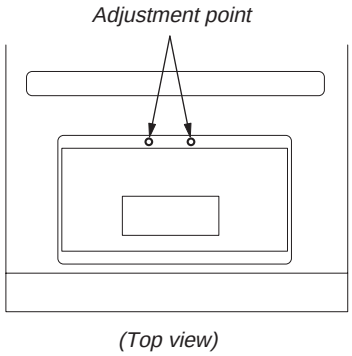
3. Mode: Playback





4. After the adjustments, apply suitable locking compound to the parts adjusted.

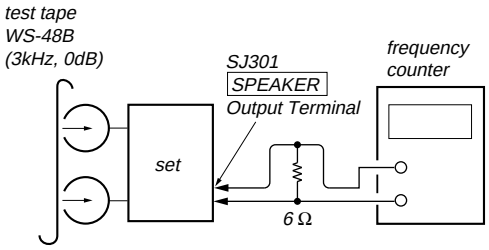
Adjustment Location:



Tape Speed Check

Procedure:

1. MODE : Playback.



2. Insert the WS-48B into deck.
3. Press the ◀▶ button of deck.
4. Check the reading of frequency counter becomes 3000 ± 90 Hz.

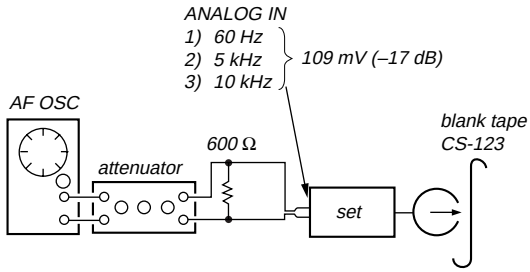
Sample Value of Wow and flutter

W.RMS (JIS) less than 0.35%
(test tape: WS-48B)

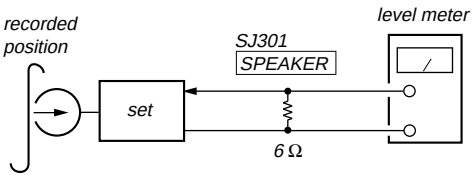
Record Level Check

Procedure:

1. Press FUNCTION button to select ANALOG IN. (This step is not necessary if the above test mode has already been set.)
2. Insert a tape into deck, press the ● REC (TAPE) button, and then press the ❚❚ (TAPE) button to start recording.
3. Mode: Record



4. Mode: Playback

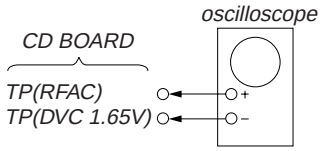


5. The playback output level should be –4.5 ±3 dB (60 Hz), 1 ±3 dB (8 kHz) and –3 ±3 dB (10 kHz).

CD SECTION

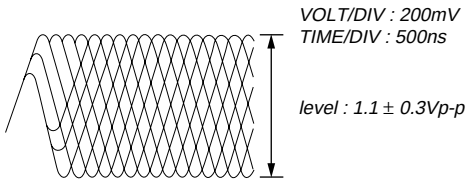
Note :
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

RF Level Check

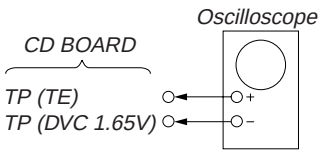


Procedure :
1. Connect oscilloscope to TP (RFAC) and TP (DVC 1.65V).
2. Turned Power switch on.
3. Load a disc (YEDS-18) and playback the number five track.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

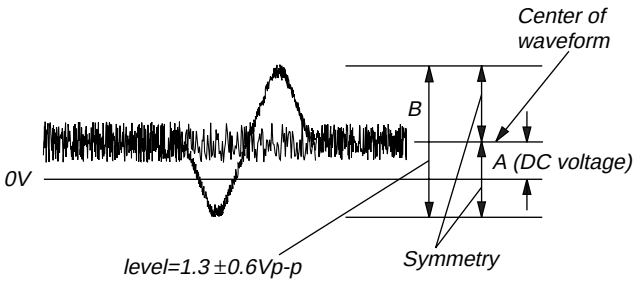
Note: Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.



E-F Balance (1 Track jump) Check



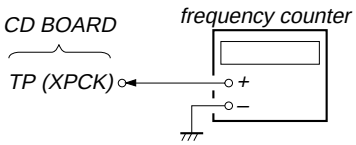
Procedure:
1. Connect oscilloscope to TP (TE) and TP (DVC 1.65V).
2. Turned Power switch on.
3. Load a disc (YEDS-18) and playback the number five track.
4. Press the [►II] button. (Becomes the 1track jump mode.)
5. Confirm that the level B and A (DC voltage) on the oscilloscope waveform.



Specification level: $\frac{A}{B}$ x 100=less than ±22%

RF PLL Free-run Frequency

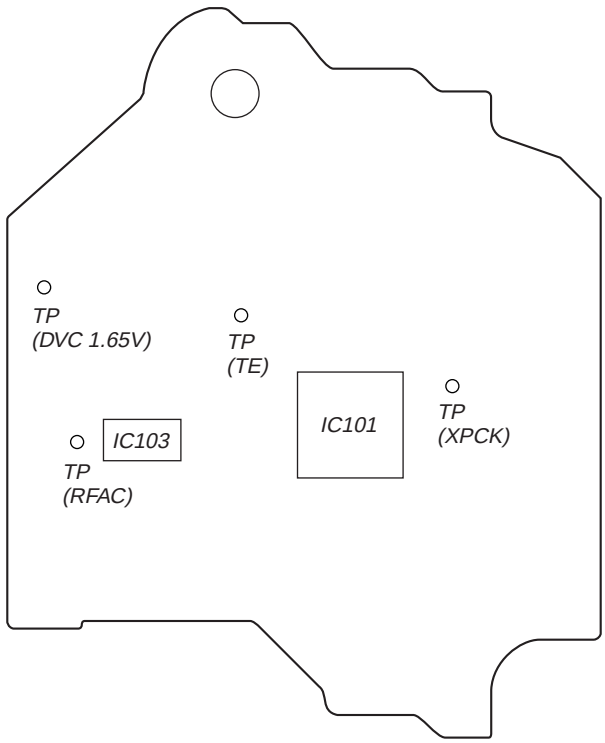
Procedure :
1. Connect frequency counter to TP (XPCK) with lead wire.



2. Turned Power switch on.
3. Put the disc (YEDS-18) in to play the number five track. Confirm that reading on frequency counter is 4.3218MHz.

Test Point Location :

[CD BOARD] — SIDE B —



MD SECTION

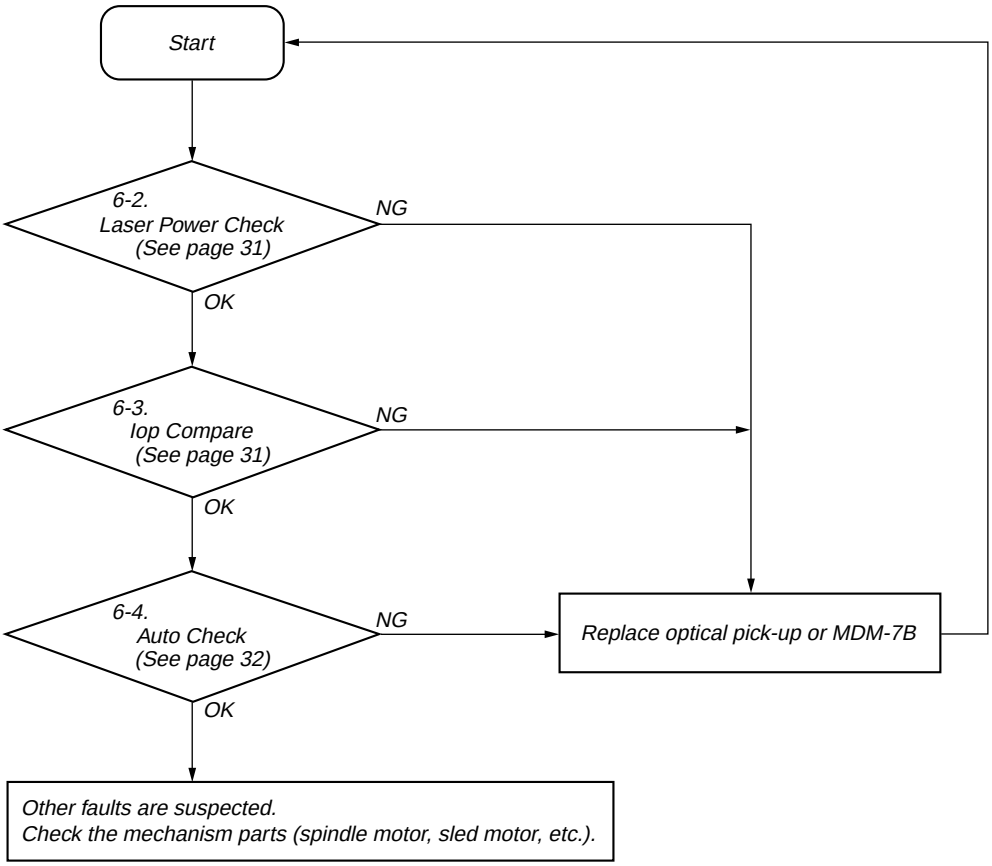
Note 1: About "R"
As this unit has only a few buttons, some operations require the use of remote commander (RM-SCP500/provided with unit: 1-476-754-11) buttons. These operations are indicated as "R" in this manual.
Example: MENU/NO "R" ...Press the MENU/NO button of the remote commander.

Note 2: Incorrect operations may be performed if the MD test mode is not entered properly.
In this case, press the I/⏻ button to turn the power off, and retry to enter the MD test mode.

1. PARTS REPLACEMENT AND ADJUSTMENT

If malfunctions caused by optical pick-up such as sound skipping are suspected, follow the following check.

Check before replacement

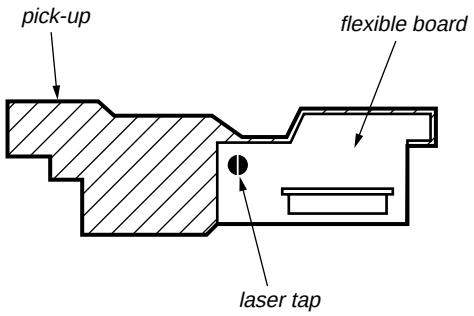


2. PRECAUTIONS FOR CHECKING LASER DIODE EMISSION

To check the emission of the laser diode during adjustments, never view directly from the top as this may lose your eye-sight.

3. PRECAUTIONS FOR USE OF OPTICAL PICK-UP (KMS-260B/260E)

As the laser diode in the optical pick-up is easily damaged by static electricity, solder the laser tap of the flexible board when using it. Before disconnecting the connector, desolder first. Before connecting the connector, be careful not to remove the solder. Also take adequate measures to prevent damage by static electricity. Handle the flexible board with care as it breaks easily.



Optical pick-up flexible board

4. PRECAUTIONS FOR ADJUSTMENTS

1. When replacing the following parts, perform the adjustments and checks with the mark ◯ in the order shown in the following table.
2. Set the MD test mode when performing adjustments.
   After completing the adjustments, exit the MD test mode.
   Perform the adjustments and checks in “Group Service” of the MD test mode.
3. Perform the adjustments to be needed in the order shown.
4. Use the following tools and measuring devices.

- Check Disc (TDYS-1) (Part No. : 4-963-646-01)
- Test Disk (MDW-74/GA-1) (Part No. : 4-229-747-01)
- Laser power meter LPM-8001 (Part No. : J-2501-046-A)
  or
  MD Laser power meter 8010S (Part No. : J-2501-145-A)*1
  - Oscilloscope (Measure after performing CAL of prove.)
  - Digital voltmeter
  - Thermometer
  - Jig for checking BD board waveform
    (Part No. : J-2501-196-A)

5. When observing several signals on the oscilloscope, etc., make sure that VC and ground do not connect inside the oscilloscope.
   (VC and ground will become short-circuited.)
6. Using the above jig enables the waveform to be checked without the need to solder.
   (Refer to Servicing Notes on page 8.)
7. As the disc used will affect the adjustment results, make sure that no dusts nor fingerprints are attached to it.

*1 **Laser power meter**
When performing laser power checks and adjustment (electrical adjustment), use of the new MD laser power meter 8010S (Part No. J-2501-145-A) instead of the conventional laser power meter is convenient.
It sharply reduces the time and trouble to set the laser power meter sensor onto the objective lens of optical pick-up.

	Parts to be replaced						
Adjustment	**Optical Pick-up**	**IC101**	**IC102**	**IC151**	**IC190**	**IC195**	**D101**
7. Initial setting of adjustment value	◯	×	×	×	×	◯	×
8. Recording of Iop information	◯	×	×	×	×	◯	×
9. Temperature compensation offset adjustment	×	◯	×	×	×	◯	◯
10. Laser power adjustment	◯	×	×	×	◯	◯	×
11. Iop NV Save	◯	×	◯	×	◯	◯	×
12. Traverse adjustment	◯	◯	×	◯	×	◯	×
13. Focus bias adjustment	◯	◯	×	◯	×	◯	×
16. Auto gain adjustment	◯	◯	×	◯	×	◯	×
6-4. AUTO CHECK	◯	◯	×	◯	◯	◯	×

5. USING THE CONTINUOUSLY RECORDED DISC

* This disc is used in focus bias adjustment and error rate check. The following describes how to create a continuous recording disc.

1. Insert a disc (blank disc) commercially available.
2. Press the I◀◀ "R" or ▶▶I "R" button and display "CREC 1MODE" (C35).
3. Press the ENTER/YES "R" button again to display "CREC 1 MID".
   Display "CREC 1(0300)" and start to recording.
4. Complete recording within 5 minutes.
5. Press the MENU/NO "R" button and stop recording .
6. Press the ⏏(MD) button and remove the disc.

The above has been how to create a continuous recorded data for the focus bias adjustment and error rate check.

Note: Be careful not to apply vibration during continuous recording.

6. CHECKS PRIOR TO REPAIRS

These checks are performed before replacing parts according to "approximate specifications" to determine the faulty locations. For details, refer to "Checks Prior to Parts Replacement and Adjustments in MD" (see page 25).

6-1. Temperature Compensation Offset Check

When performing adjustments, set the internal temperature and room temperature to 22 to 28ºC.

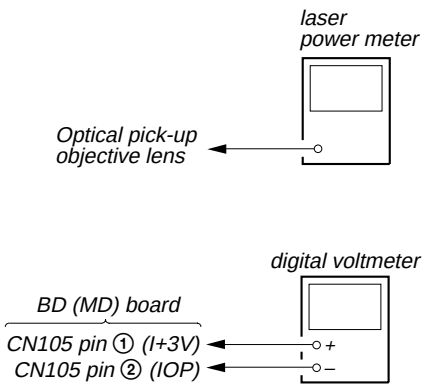
Procedure:

1. Press the I◀◀ "R" or ▶▶I "R" button to display "TEMP CHECK" (C12).
2. Press the ENTER/YES "R" button.
3. "T=@@(##) [OK]" should be displayed. If "T=@@ (##) [NG]" is displayed, it means that the results are bad.
   (@@ indicates the current value set, and ## indicates the value written in the non-volatile memory.)

6-2. Laser Power Check

Before starting adjustment;
The laser power adjustment value changes depending upon the types of the optical pick-up (KMS-260B or KMS-260E).
Check the type of the optical pick-up before starting adjustment.
(See the illustrations "The method of ideutifying the optical pick-up" on page 35
Before checking, check the Iop value of the optical pick-up.
(Refer to 8. Recording and Displaying the Iop Information (see page 34)

Connection:



Procedure:

1. Set the laser power meter on the objective lens of the optical pick-up. (When it cannot be set properly, press the ◀◀"R" button or ▶▶"R" button to move the optical pick-up.)
   Connect the digital volt meter to CN105 pin ① (I+3V) and CN105 pin ② (IOP).
2. Then, press the I◀◀ "R" or ▶▶I"R" button and display "LDPWR CHECK" (C13).
3. Press the ENTER/YES "R" button once and display "LD 0.9mW$". Check that the reading of the laser power meter becomes specified value.

SPECIFIED VALUE	KMS-260B	0.85 to 0.91 mW
	KMS-260E	0.90 to 0.96 mW

4. Press the ENTER/YES "R" button once more and display " LD 8.4mW$". Check that the reading the laser power meter and digital volt meter satisfy the specified value.

Specified Value:

Laser power meter reading :

KMS-260B	6.8 to 7.2 mW
KMS-260E	7.0 to 7.5 mW

Digital voltmeter reading : Optical pick-up displayed value ± 10%

(Optical pick-up label)

KMS260B
20101
H0576

For details of the method for checking this value, refer to "8. Recording and Displaying the Iop Information"

IOP=57.6 mA in this case
IOP (mA) = Digital voltmeter reading (mV)/1 (Ω)

5. Press the MENU/NO "R" button and display "LDPWR CHECK" (C13) and stop the laser emission.
   (The MENU/NO "R" button is effective at all times to stop the laser emission.)

Note: After step 4, each time the ENTER/YES "R" button is pressed, the display will be switched to "LD 0.7W$"and "LD 6.2mW$". Nothing needs to be performed here.

Checking Location: BD (MD) board (see page 38)

6-3. Iop Compare

The current Iop value at laser power 7 mW output and reference Iop value (set at shipment) written in the nonvolatile memory are compared, and the rate of increase/decrease will be displayed in percentage.

Note: Perform this function with the optical pick-up set at room temperature.

Procedure:

1. Press the I◀◀"R" or ▶▶I "R" button to display "Iop Compare" (C27).
2. Press the ENTER/YES "R" button and start measurements.
3. When measurements complete, the display changes to "± xx% yy".
   xx is the percentage of increase/decrease, and OK or NG is displayed at yy to indicate whether the percentage of increase/decrease is within the allowable range.
4. Press the MENU/NO "R" button to end.

6-4. Auto Check

This test mode performs CREC and CPLAY automatically for mainly checking the characteristics of the optical pick-up. To perform this test mode, the laser power must first be checked. Perform Auto Check after the laser power check and Iop compare.

Procedure:

1. Press the ⏮ "R" or ⏭ "R" button to display "AUTO CHECK" (C01).
2. Press the ENTER/YES "R" button. If "LDPWR ミチェック" is displayed, it means that the laser power check has not been performed. In this case, perform the laser power check and Iop Compare, and then repeat from enter the MD test mode.
3. If a disc is in the mechanical deck, it will be ejected forcibly. "DISC IN" will be displayed in this case. Load a test disc (MDW-74/GA-1) which can be recorded.
4. If a disc is loaded at step 3, the check will start automatically.
5. When "XX CHECK" is displayed, the item corresponding to XX will be performed.
   When "06 CHECK" completes, the disc loaded at step 3 will be ejected. "DISC IN" will be displayed. Load the check disc (TDYS-1).
6. When the disc is loaded in the step 5, the check will automatically be resumed from "07 CHECK".
7. After completing to "0C CHECK" of test item 12, check OK or NG will be displayed. If all items are OK, "CHK ALL OK" will be displayed. If any item is NG, it will be displayed as "NG:xxxx".

When "CHK ALL OK" is displayed, it means that the optical pick-up is normal. Check the operations of other parts (spindle motor, sled motor, etc.).
When displayed as "NG:xxxx", it means that the optical pick-up is faulty. In this case, replace the optical pick-up.

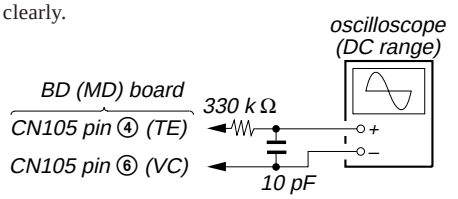
6-5. Other Checks

All the following checks are performed by the Auto Check mode. They therefore need not be performed in normal operation.
6-6. Traverse Check
6-7. Focus Bias Check
6-8. C PLAY Check
6-9. Self-Recording/Playback Check

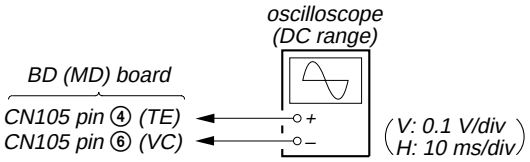
6-6. Traverse Check

Note 1: Data will be erased during MO reading if a recorded disc is used in this adjustment.

Note 2: If the traverse waveform is not clear, connect the oscilloscope as shown in the following figure so that it can be seen more clearly.



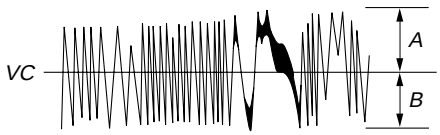
Connection:



Procedure:

1. Connect an oscilloscope to CN105 pin ④ (TE) and CN105 pin ⑥ (VC) on the BD (MD) board.
2. Load a disc (any available on the market). (Refer to Note 1)
3. Press the ⏩ "R" button to move the optical pick-up outside the pit.
4. Press the ⏮ "R" or ⏭ "R" button to display "EF MO CHECK"(C14).
5. Press the ENTER/YES "R" button to display "EFB = ▯▯ MO-R".
   (Laser power READ power/Focus servo ON/tracking servo OFF/spindle (S) servo ON)
6. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not press the ⏮ "R" or ⏭ "R" button.
   (Read power traverse checking)

Traverse Waveform

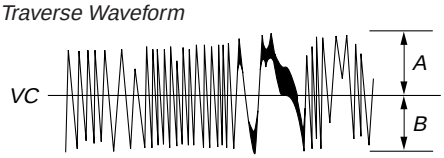


Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

7. Press the ENTER/YES "R" button to display "EFB = ▯▯ MO-W".
8. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not press the ⏮ "R" or ⏭ "R" button.
   (Write power traverse checking)

Traverse Waveform

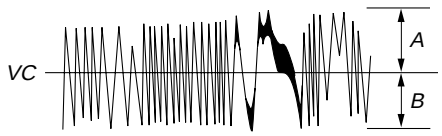


Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

9. Press the [ENTER/YES "R"] button to display "EFB = □□ MO-P".
   Then, the optical pick-up moves to the pit area automatically and servo is imposed.
10. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not press the [⏮ "R"] or [⏭ "R"] button.

Traverse Waveform

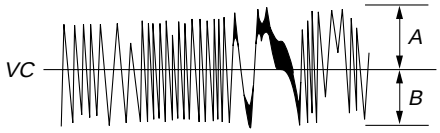


Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

11. Press the [ENTER/YES "R"] button to display "EF MO CHECK" (C14).
    The disc stops rotating automatically.
12. Press the [⏏] (MD) button and take out the disc.
13. Load the check disc (TDYS-1).
14. Press the [⏮ "R"] or [⏭ "R"] button and display "EF CD CHECK" (C15).
15. Press the [ENTER/YES "R"] button to display "EFB = □□ CD". Servo is imposed automatically.
16. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not press the [⏮ "R"] or [⏭ "R"] button.

Traverse Waveform



Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

17. Press the [ENTER/YES "R"] button to display "EF CD CHECK" (C15).
18. Press the [⏏] (MD) button and take out the check disc (TDYS-1).

Checking Location: BD (MD) board (see page 38)

6-7. Focus Bias Check

Change the focus bias and check the focus tolerance amount.

Procedure:

1. Load the test disc (MDW-74/GA-1).
2. Press the [⏮ "R"] or [⏭ "R"] button to display "CPLAY 1MODE" (C34).
3. Press the [ENTER/YES "R"] button to display "CPLAY 1MID".
4. Press the [MENU/NO "R"] button when "C = □□ AD = □□)" is displayed.
5. Press the [⏮ "R"] or [⏭ "R"] button to display "FBIAS CHECK" (C16).
6. Press the [ENTER/YES "R"] button to display "□□□□/□□ c = □□". The first four digits indicate the C1 error rate, the two digits after [/] indicate ADER, and the 2 digits after [c =] indicate the focus bias value.
   Check that the C1 error is below 50 and ADER is below 2.
7. Press the [ENTER/YES "R"] button to display "□□□□/□□ b = □□". Check that the C1 error is about 200 and ADER is below 2.
8. Press the [ENTER/YES "R"] button to display "□□□□/□□ a = □□". Check that the C1 error is about 200 and ADER is below 2.
9. Press the [MENU/NO "R"] button, then press the [⏏] (MD) button and take out the test disc.

6-8. C PLAY Check

MO Error Rate Check

Procedure:

1. Load the test disc (MDW-74/GA-1).
2. Press the [⏮ "R"] or [⏭ "R"] button to display "CPLAY 1MODE" (C34).
3. Press the [ENTER/YES "R"] button to display "CPLAY 1MID".
4. The display changes to "C = □□□□ AD = □□)".
5. If the C1 error rate is below 50, check that ADER is 00.
6. Press the [MENU/NO "R"] button to stop playback, then press the [⏏] (MD) button and take out the test disc.

CD Error Rate Check

Procedure:

1. Load the check disc (TDYS-1).
2. Press the [⏮ "R"] or [⏭ "R"] button to display "CPLAY 1MODE" (C34).
3. Press the [ENTER/YES "R"] button to display "CPLAY 1MID".
4. The display changes to "C = □□□□ AD = □□)".
5. Check that the C1 error rate is below 50.
6. Press the [MENU/NO "R"] button to stop playback, then press the [⏏] (MD) button and take out the check disc.

6-9. Self-Recording/playback Check

Prepare a continuous recording disc using the unit to be repaired and check the error rate.

Procedure:

1. Load a recordable disc (blank disc).
2. Press the [⏮ "R"] or [⏭ "R"] button to display "CREC 1MODE" (C35).
3. Press the [ENTER/YES "R"] button to display "CREC 1MID".
4. When recording starts, "REC" and "CREC 1 (@@@@)" (@@@@ is the address) are displayed.
5. About 1 minute later, press the [MENU/NO "R"] button to stop continuous recording.
6. Press the [⏮ "R"] or [⏭ "R"] button to display "CPLAY 1 MODE" (C34).
7. Press the [ENTER/YES "R"] button to display "CPLAY 1MID".
8. "C = □□□□ AD = □□)" will be displayed.
9. Check that the C1 error becomes below 50 and the AD error below 2.
10. Press the [MENU/NO "R"] button to stop playback, then press the [⏏] (MD) button and take out the disc.

7. INITIAL SETTING OF ADJUSTMENT VALUE

Note:
Mode which sets the adjustment results recorded in the non-volatile memory to the initial setting value. However the results of the temperature compensation offset adjustment will not change to the initial setting value.
If initial setting is performed, perform all adjustments again excluding the temperature compensation offset adjustment.
For details of the initial setting, refer to "4. Precautions for Adjustments" (See page 39) and execute the initial setting before the adjustment as required.

Procedure:
1. Press the [I◀◀ "R"] or [▶▶I "R"] button to display "ADJ CLEAR" (C28).
2. Press the [ENTER/YES "R"] button. "Complete!" will be displayed momentarily and initial setting will be executed, after which "ADJ CLEAR" (C28) will be displayed.

8. RECORDING AND DISPLAYING THE IOP INFORMATION

The IOP data can be recorded in the non-volatile memory. The IOP value on the optical pick-up label and the IOP value after the adjustment will be recorded. Recording these data eliminates the need to read the label on the optical pick-up.

Recording Procedure:
1. Press the [I◀◀ "R"] or [▶▶I "R"] button to display "Iop Write" (C05), and press the [ENTER/YES "R"] button.
2. The display becomes "Ref=@@@.@" (@ is an arbitrary number) and the numbers which can be changed will blink.
3. Input the IOP value on the optical pick-up label.
   To select the number: Press the [I◀◀ "R"] or [▶▶I "R"] button.
   To select the digit : Press the [REC MODE] button.
4. When the [ENTER/YES "R"] button is pressed, the display becomes "Measu=@@@.@" (@ is an arbitrary number).
5. As the adjustment results are recorded for the step 4 value. Leave it as it is and press the [ENTER/YES "R"] button.
6. "Complete!" will be displayed momentarily. The value will be recorded in the non-volatile memory and the display will become "Iop Write" (C05).

Display Procedure:
1. Press the [I◀◀ "R"] or [▶▶I "R"] button to display "IopRead"(C26).
2. "@@.@/##.#" is displayed and the recorded contents are displayed.
   @@.@ indicates the IOP value on the optical pick-up label.
   ##.# indicates the IOP value after adjustment
3. To end, press the [MENU/NO "R"] button to display "Iop Read" (C26).

9. TEMPERATURE COMPENSATION OFFSET ADJUSTMENT

Save the temperature data at that time in the non-volatile memory as 25 ˚C reference data.

Note:
1. Usually, do not perform this adjustment.
2. Perform this adjustment in an ambient temperature of 22 ˚C to 28 ˚C. Perform it immediately after the power is turned on when the internal temperature of the unit is the same as the ambient temperature of 22 ˚C to 28 ˚C.
3. When D101 has been replaced, perform this adjustment after the temperature of this part has become the ambient temperature.

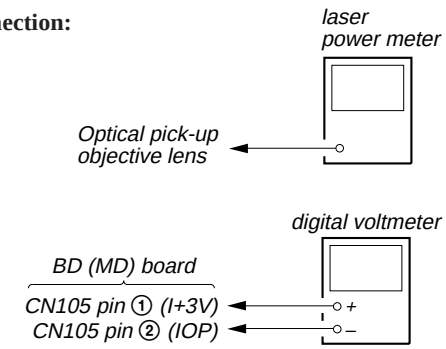
Procedure:
1. Press the [I◀◀ "R"] or [▶▶I "R"] button to display "TEMP ADJUST" (C03).
2. Press the [ENTER/YES "R"] button to select the "TEMP ADJUST" mode.
3. "TEMP = ▯▯ [OK]" and the current temperature data will be displayed.
4. To save the data, press the [ENTER/YES "R"] button.
   When not saving the data, press the [MENU/NO "R"] button.
5. When the [ENTER/YES "R"] button is pressed, "TEMP = ▯▯ SAVE" will be displayed and turned back to "TEMP ADJUST" (C03) display then. When the [MENU/NO "R"] button is pressed, "TEMP ADJUST" (C03) will be displayed immediately.

Specified Value:
The "TEMP = ▯▯" should be within "E0 - EF", "F0 - FF", "00 - 0F", "10 - 1F" and "20 - 2F".

10.LASER POWER ADJUSTMENT

Before starting adjustment;
The laser power adjustment value changes depending upon the types of the optical pick-up (KMS-260B or KMS-260E).
Check the type of the optical pick-up before starting adjustment. (See the illustrations "The method of identifying the optical pick-up on page 35.)
Check the IOP value of the optical pick-up before adjustments. (Refer to 8. Recording and Displaying the Iop Information)

Connection:



Procedure:
1. Insert the laser power meter probe into the disk insertion slot and set it on top of the objective lens of the optical pick-up. (When it cannot be set properly, press the [◀◀ "R"] button or [▶▶ "R"] button to move the optical pick-up)
   Connect the digital voltmeter to CN105 pin ① (I+3V) and CN105pin ② (IOP) on the BD (MD) board.
2. Press the [I◀◀ "R"] or [▶▶I "R"] button to display "LDPWR ADJUST" (C04).
   (Laser power : For adjustment)
3. Press the [ENTER/YES "R"] button once to display "LD 0.9 mW $ ▯▯".
4. Press the [I◀◀ "R"] or [▶▶I "R"] button until the laser power meter reading matches with the specified value as described in the following table.

SPECIFIED VALUE	KMS-260B	0.85 to 0.91 mW
	KMS-260E	0.90 to 0.96 mW

   Press the [ENTER/YES "R"] button after setting the range knob of the laser power meter, and save the adjustment results. ("LD SAVE $ ▯▯" will be displayed for a moment)
5. Then "LD 7.0 mW $ ▯▯" will be displayed.

6. Press the |◀◀ "R"| or |▶▶| "R"| button so that the reading of the laser power meter becomes the specified value, press the |ENTER/YES "R"| button to save it.

SPECIFIED VALUE	KMS-260B	6.7 to 7.1 mW
	KMS-260E	7.2 to 7.3 mW

Note: Do not perform the emission with 7.0 mW more than 15 seconds continuously.

7. Then, press the |◀◀ "R"| or |▶▶| "R"| button to display "LDPWR CHECK" (C13).
8. Press the |ENTER/YES "R"| button once to display "LD 0.9mW$ □□". Check that the reading of the laser power meter matches with the specified value as described in the following table.

SPECIFIED VALUE	KMS-260B	0.85 to 0.91 mW
	KMS-260E	0.90 to 0.96 mW

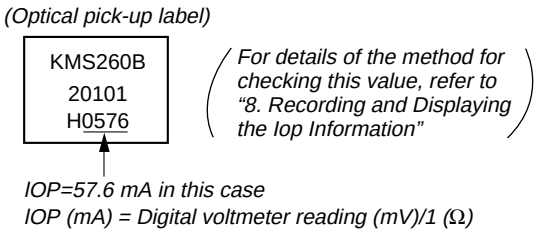
9. Press the |ENTER/YES "R"| button once more to display "LD 7.0mW$ □□". Check that the reading the laser power meter and digital voltmeter satisfy the specified value.
   Note down the digital voltmeter reading value.

Specified Value:

Laser power meter reading :

SPECIFIED VALUE	KMS-260B	6.8 to 7.2 mW
	KMS-260E	7.0 to 7.5 mW

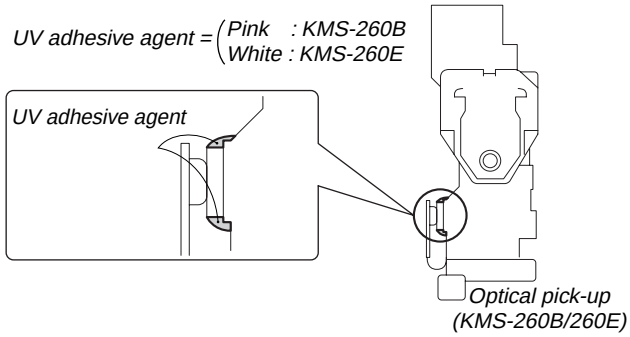
Digital voltmeter reading : Value on the optical pick-up label ±10%


(Optical pick-up label)
KMS260B
20101
H0576
For details of the method for checking this value, refer to "8. Recording and Displaying the Iop Information"
IOP=57.6 mA in this case
IOP (mA) = Digital voltmeter reading (mV)/1 (Ω)

10. Press the |MENU/NO "R"| button to display "LDPWR CHECK" (C13) and stop the laser emission.
    (The |MENU/NO "R"| button is effective at all times to stop the laser emission)
11. Press the |◀◀ "R"| or |▶▶| "R"| button to display "Iop Write" (C05).
12. Press the |ENTER/YES "R"| button. When the display becomes Ref=@@@.@ (@ is an arbitrary number), press the |ENTER/YES "R"| button to display "Measu=@@@.@" (@ is an arbitrary number).
13. The numbers which can be changed will blink. Input the Iop value noted down at step 9.
    To select the number : Press the |◀◀ "R"| or |▶▶| "R| button.
    To select the digit : Press the |REC MODE| button.
14. When the |ENTER/YES "R"| button is pressed, "Complete!" will be displayed momentarily. The value will be recorded in the non-volatile memory and the display will become "Iop Write" (C05).

Note: After step 4, each time the |ENTER/YES "R"| button is pressed, the display will be switched to "LD 0.7mW$ □□" and "LD 6.2mW$ Nothing needs to be performed here.

The method of identifying the optical pick-up (KMS-260B/260E)



11. Iop NV SAVE

Write the reference values in the nonvolatile memory to perform "Iop compare". As this involves rewriting the reference values, do not perform this procedure except when adjusting the laser power during replacement of the optical pick-up and when replacing the IC102. Otherwise the optical pick-up check may deteriorate.

Note: Perform this function with the optical pick-up set at room temperature.

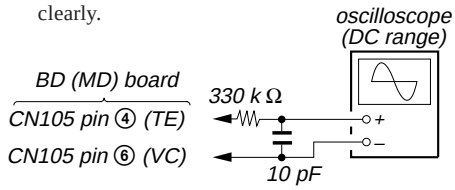
Procedure:

1. Press the |◀◀ "R"| or |▶▶| "R"| button to display "Iop NV Save" (C06).
2. Press the |ENTER/YES "R"| button and display "Iop [stop]".
3. After the display changes to "Iop =xxsave?", press the |ENTER/YES "R"| button.
4. After "Complete!" is displayed momentarily, the display changes to "Iop 7.0 mW".
5. After the display changes to "Iop=yysave?", press the |ENTER/YES "R"| button.
6. When "Complete!" is displayed, it means that Iop NV saving has been completed.

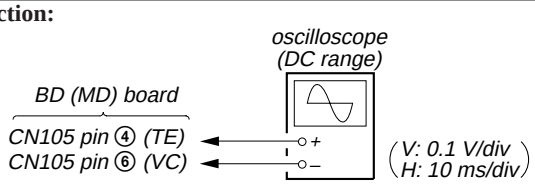
12. TRAVERSE ADJUSTMENT

Note 1: Data will be erased during MO reading if a recorded disc is used in this adjustment.

Note 2: If the traverse waveform is not clear, connect the oscilloscope as shown in the following figure so that it can be seen more clearly.



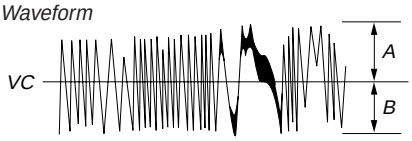
Connection:



Procedure:

1. Connect an oscilloscope to CN105 pin ④ (TE) and CN105 pin ⑥ (VC) on the BD (MD) board.
2. Load a disc (any available on the market). (Refer to Note 1)
3. Press the |▶▶ "R"| button to move the optical pick-up outside the pit.
4. Press the |◀◀ "R"| or |▶▶| "R"| button to display "EF MO ADJUST" (C07).
5. Press the |ENTER/YES "R"| button to display "EFB = □□ MO-R". (Laser power READ power/Focus servo ON/tracking servo OFF/spindle (S) servo ON)
6. Press the |◀◀ "R"| or |▶▶| "R"| button so that the waveform of the oscilloscope becomes the specified value.
   (When the |◀◀ "R"| or |▶▶| "R"| button is pressed, the □□ of "EFB= □□" changes and the waveform changes) In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.
   (Read power traverse adjustment)

Traverse Waveform

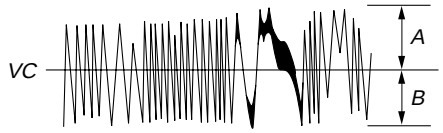


Specification A = B

7. Press the |ENTER/YES "R"| button and save the result of adjustment to the non-volatile memory ("EFB = □□ SAVE" will be displayed for a moment. Then "EFB = □□ MO-W" will be displayed).

8. Press the |◀◀ "R" or ▶▶| "R" button so that the waveform of the oscilloscope becomes the specified value.
   (When the |◀◀ "R" or ▶▶| "R" button is pressed, the □□ of "EFB= □□" changes and the waveform changes) In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.
   (Write power traverse adjustment)

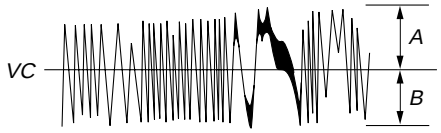
Traverse Waveform



Specification A = B

9. Press the ENTER/YES "R" button, and save the adjustment results in the non-volatile memory. ("EFB = □□ SAVE" will be displayed for a moment)
10. "EFB = □□ MO-P" will be displayed.
    The optical pick-up moves to the pit area automatically and servo is imposed.
11. Press the |◀◀ "R" or ▶▶| "R" button until the waveform of the oscilloscope moves closer to the specified value.
    In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.

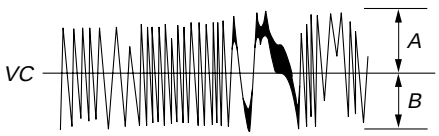
Traverse Waveform



Specification A = B

12. Press the ENTER/YES "R" button, and save the adjustment results in the non-volatile memory. ("EFB = □□ SAVE" will be displayed for a moment)
    Next "EF MO ADJUST" (C07) is displayed. The disc stops rotating automatically.
13. Press the ⏏ (MD) button and take out the disc.
14. Load the check disc (TDYS-1).
15. Press the |◀◀ "R" or ▶▶| "R" button to display "EF CD ADJUST" (C08).
16. Press the ENTER/YES "R" button to display "EFB = □□ CD". Servo is imposed automatically.
17. Press the |◀◀ "R" or ▶▶| "R" button so that the waveform of the oscilloscope moves closer to the specified value.
    In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.

Traverse Waveform



Specification A = B

18. Press the ENTER/YES "R" button, display "EFB = □□ SAVE" for a moment and save the adjustment results in the non-volatile memory.
    Next "EF CD ADJUST" (C08) will be displayed.
19. Press the ⏏ (MD) button and take out the check disc.

Adjustment Location: BD board (see page 38)

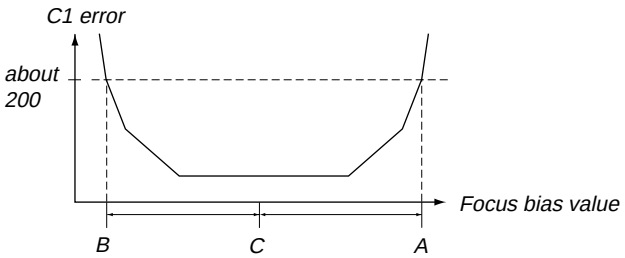
13. FOCUS BIAS ADJUSTMENT

Procedure:

1. Load the continuously-recorded disc. (Refer to "5. USING THE CONTINUOUSLY RECORDED DISC" (See page 31))
2. Press the |◀◀ "R" or ▶▶| "R" button to display "CPLAY1 MODE" (C34).
3. Press the ENTER/YES "R" button to display "CPLAY 1MID".
4. Press the MENU/NO "R" button when "C = □□□□ AD = □□)" is displayed.
5. Press the |◀◀ "R" or ▶▶| "R" button to display "FBIAS ADJUST" (C09).
6. Press the ENTER/YES "R" button to display "□□□□/□□ a = □□". The first four digits indicate the C1 error rate, the two digits after "/ " indicate ADER, and the 2 digits after "a =" indicate the focus bias value.
7. Press the ▶▶| "R" button and find the focus bias value at which the C1 error rate becomes about 200 (refer to Note 2).
8. Press the ENTER/YES "R" button to display "□□□□/□□ b = □□".
9. Press the |◀◀ "R" button and find the focus bias value at which the C1 error rate becomes about 200.
10. Press the ENTER/YES "R" button to display "□□□□/□□ c = □□".
11. Check that the C1 error rate is below 20 and ADER is 00. Then press the ENTER/YES "R" button.
12. If the "(□□)" in "□□ - □□ - □□ (□□)" is above 20, press the ENTER/YES "R" button.
    If below 20, press the MENU/NO "R" button and repeat the adjustment from step 2.
13. Press thet ⏏ (MD) button and take out the disc.

Note 1: The relation between the C1 error and focus bias is as shown in the following figure. Find points A and B in the following figure using the above adjustment. The focal point position C is automatically calculated from points A and B.

Note 2: As the C1 error rate changes, perform the adjustment using the average vale.



14. ERROR RATE CHECK

14-1. CD Error Rate Check

Procedure:

1. Load the check disc (TDYS-1).
2. Press the [I◄◄ "R"] or [►►I "R"] button and display "CPLAY1 MODE" (C34).
3. Press the [ENTER/YES "R"] button twice and display "CPLAY1 MID".
4. The display changes to "C = □□□□□ AD = □□)".
5. Check that the C1 error rate is below 50.
6. Press the [MENU/NO "R"] button to stop playback, then press the [⏏] (MD) button and take out the check disc.

14-2. MO Error Rate Check

Procedure:

1. Load the continuously-recorded disc. (Refer to "5. USING THE CONTINUOUSLY RECORDED DISC" (See page 31))
2. Press the [I◄◄ "R"] or [►►I "R"] button to display "CPLAY1 MODE" (C34).
3. Press the [ENTER/YES "R"] button to display "CPLAY1MID".
4. The display changes to "C1 = □□□□□ AD = □□)".
5. If the C1 error rate is below 50, check that ADER is 00.
6. Press the [MENU/NO "R"] button to stop playback, then press the [⏏](MD) button and take out the disc.

15. FOCUS BIAS CHECK

Change the focus bias and check the focus tolerance amount.

Procedure:

1. Load the continuously-recorded disc. (Refer to "5. USING THE CONTINUOUSLY RECORDED DISC" (See page 31))
2. Press the [I◄◄ "R"] or [►►I "R"] button to display "CPLAY1 MODE" (C34).
3. Press the [ENTER/YES "R"] button twice to display "CPLAY1 MID".
4. Press the [MENU/NO "R"] button when "C1 = □□□□□ AD = □□)" is displayed.
5. Press the [I◄◄ "R"] or [►►I "R"] button to display "FBIAS CHECK" (C16).
6. Press the [ENTER/YES "R"] button to display "□□□□□/□□ c = □□". The first four digits indicate the C1 error rate, the two digits after "/ " indicate ADER, and the 2 digits after "c =" indicate the focus bias value.
   Check that the C1 error is below 50 and ADER is below 2.
7. Press the [ENTER/YES "R"] button and display "□□□□□/□□ b = □□".
   Check that the C1 error is below 100 and ADER is below 2.
8. Press the [ENTER/YES "R"] button and display "□□□□□/□□ a = □□".
   Check that the C1 error is below 100 and ADER is below 2
9. Press the [MENU/NO "R"] button, then press the [⏏](MD) button and take out the disc.

Note: If the C1 error and ADER are above other than the specified value at points a (step 8. in the above) or b (step 7. in the above), the focus bias adjustment may not have been carried out properly. Adjust perform the beginning again.

16. AUTO GAIN CONTROL OUTPUT LEVEL ADJUSTMENT

Be sure to perform this adjustment when the optical pick-up is replaced.
If the adjustment results becomes "Adjust NG!", the optical pick-up may be faulty or the servo system circuits may be abnormal.

16-1. CD Auto Gain Control Output Level Adjustment

Procedure:

1. Load the check disc (TDYS-1).
2. Press the [I◄◄ ◄◄ "R"] or [►► ►►I "R"] button to display "AG Set (CD)" (C11).
3. When the [ENTER/YES "R"] button is pressed, the adjustment will be performed automatically.
   "Complete!" will then be displayed momentarily when the value is recorded in the non-volatile memory, after which the display changes to "AG Set (CD)" (C11).
4. Press the [⏏] (MD) button and take out the check disc.

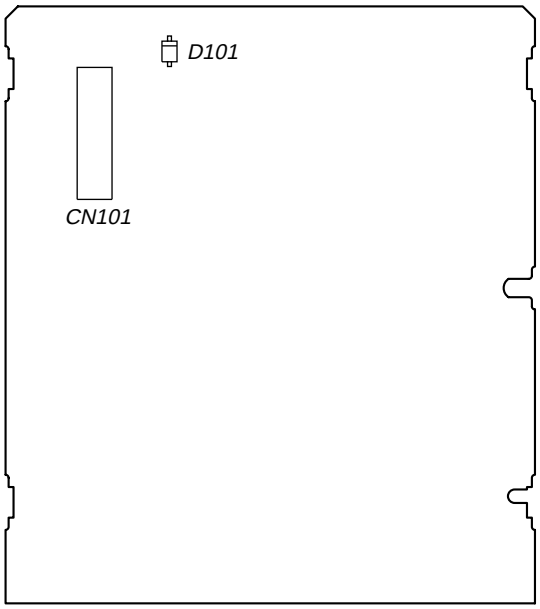
16-2. MO Auto Gain Control Output Level Adjustment

Procedure:

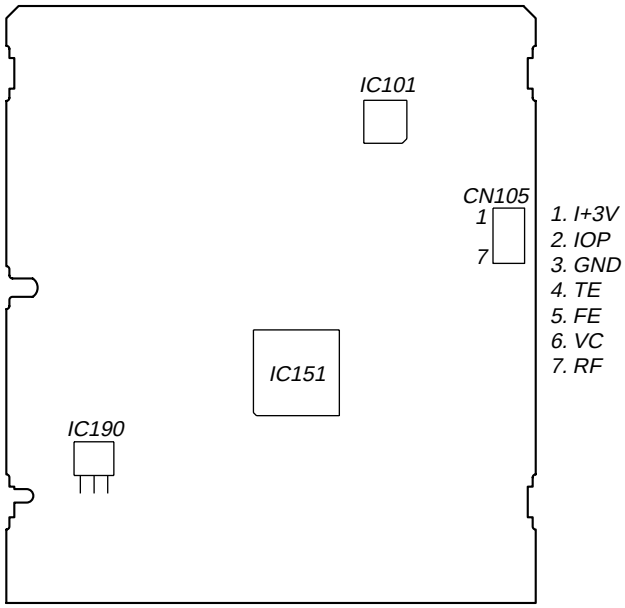
1. Load the test disc (MDW-74/GA-1).
2. Press the [I◄◄ "R"] or [►►I "R"] button to display "AG Set (MO)" (C10).
3. When the [ENTER/YES "R"] button is pressed, the adjustment will be performed automatically.
   "Complete!" will then be displayed momentarily when the value is recorded in the non-volatile memory, after which the display changes to "AG Set (MO)" (C10).
4. Press the [⏏] (MD) button and take out the test disc.

Adjustment and checking Loacation:

– BD (MD) BOARD (Component Side) –



– BD (MD) BOARD (Conductor Side) –

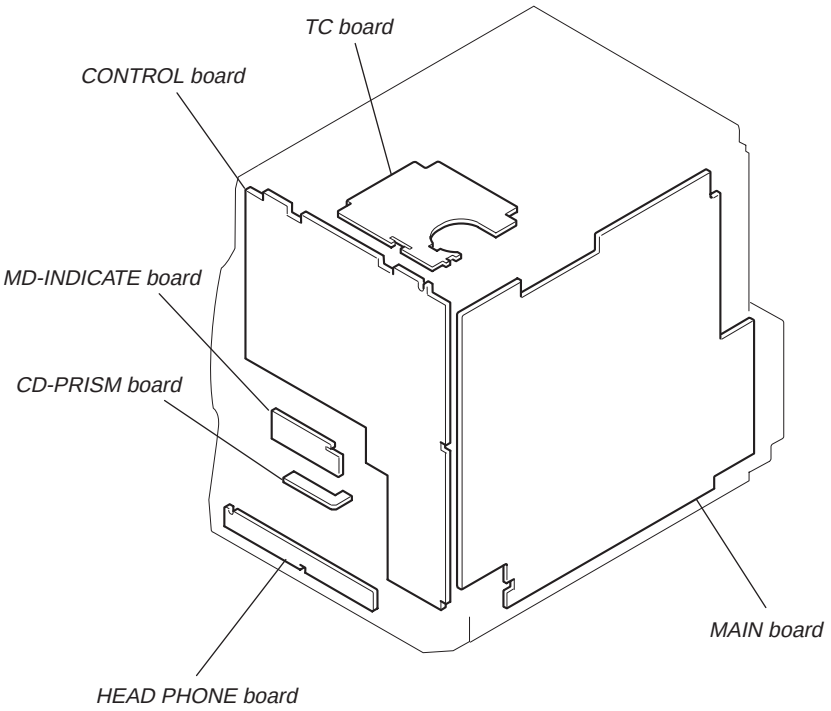


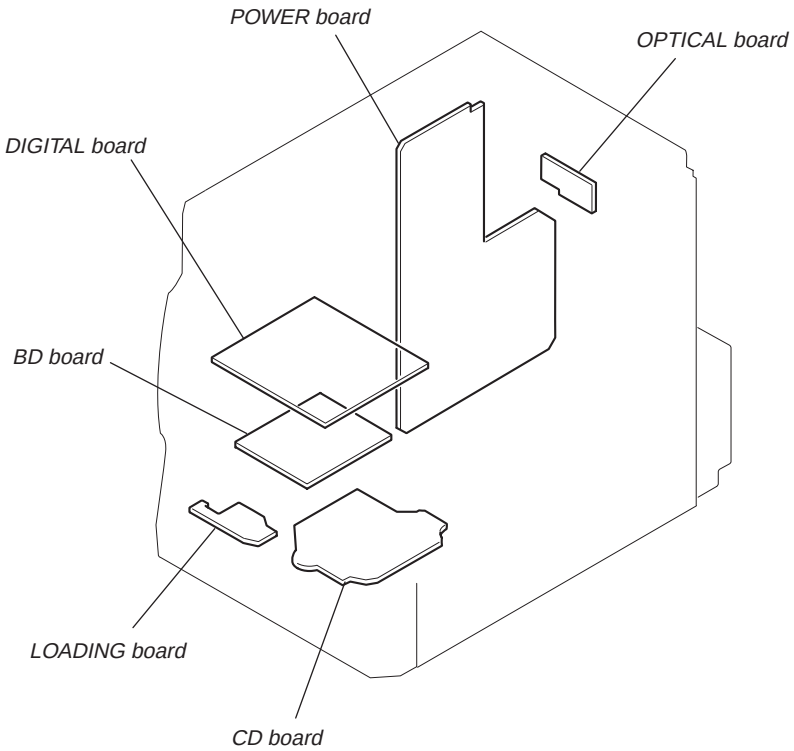
Note: It is useful to use the jig for checking the waveform. (Refer to Servicing Notes on page 8)

MEMO

SECTION 7
DIAGRAMS

7-1. CIRCUIT BOARDS LOCATION





THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For schematic diagrams.

Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。	

- : B+ Line.
- : B– Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - : FM
  - : VIDEO/MD (AUDIO)
  - : PB (TAPE)
  - : REC (TAPE)
  - : CD (Analog)
  - : CD (DIGITAL OUT)
  - : MD (PB)
  - : MD (REC)
- Abbreviation
  - AUS : Australian model
  - CH : Chinese model
  - E51 : Chilean and Peruvian model
  - HK : Hong Kong model
  - TH : Thai model
  - TW : Taiwan model

For printed wiring boards.

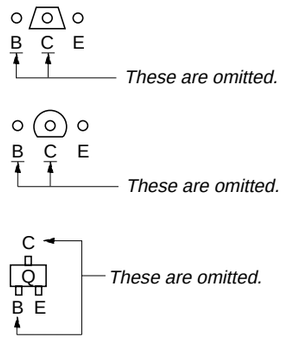
Note:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ○ : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing.

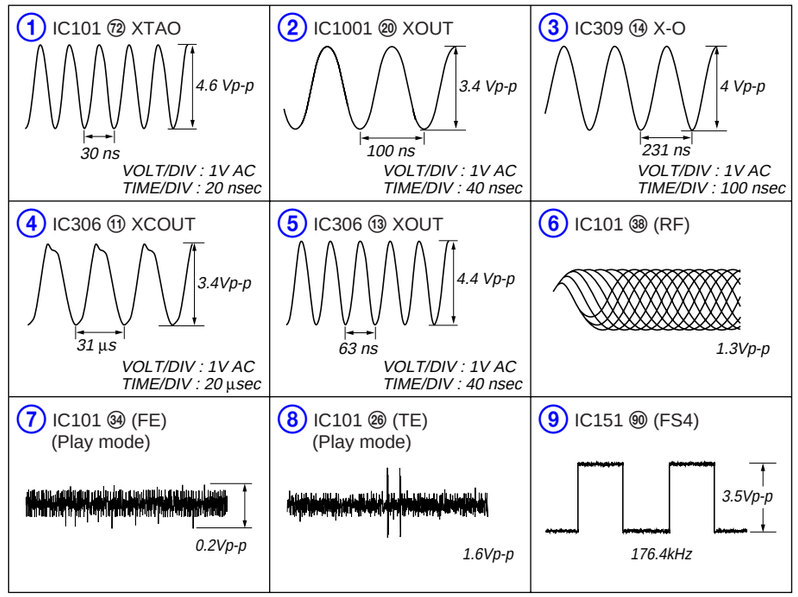
(The other layers' patterns are not indicated.)

Caution:
Pattern face side: (Side B) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A) Parts on the parts face side seen from the parts face are indicated.

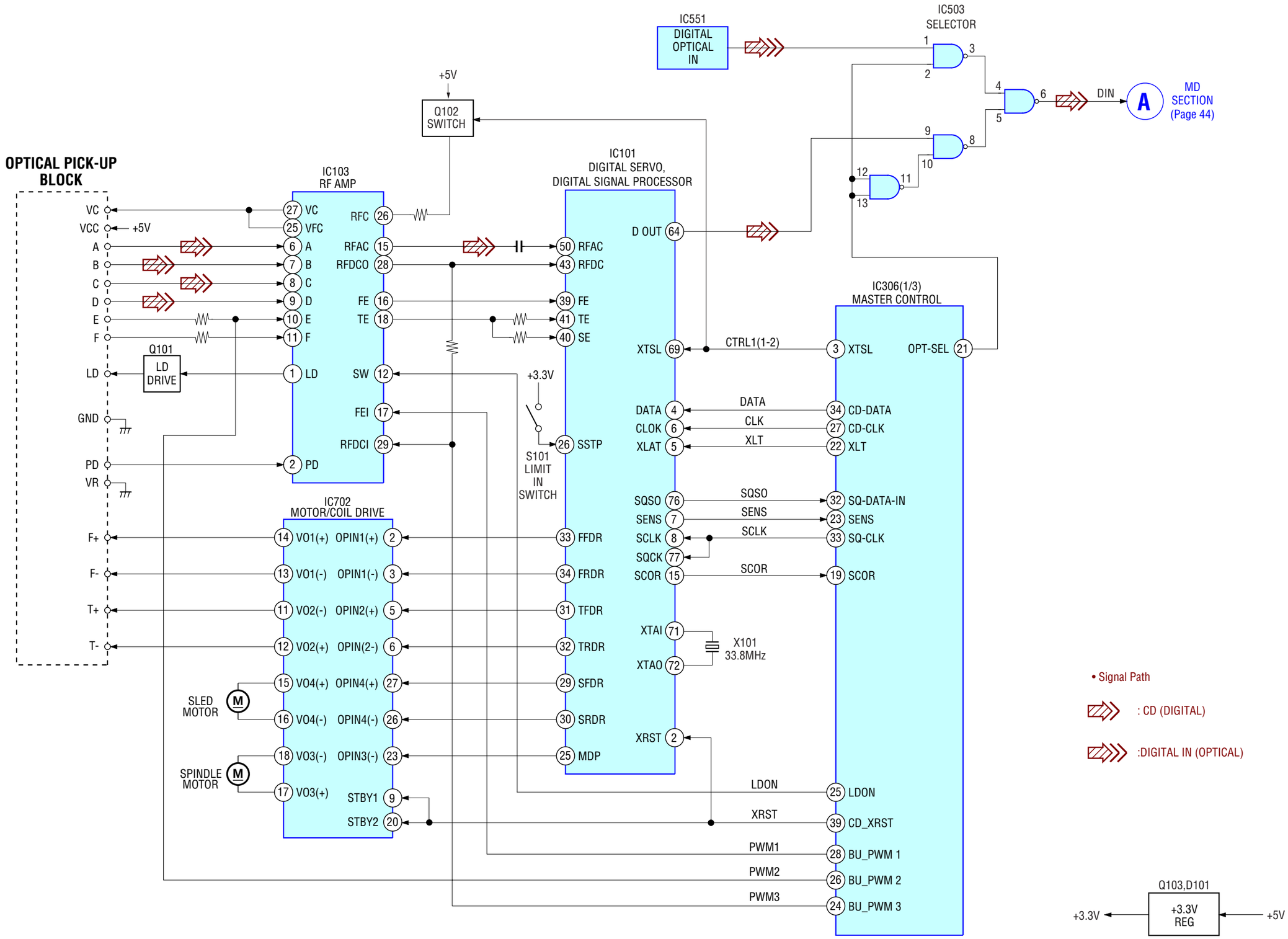
- **Indication of transistor**



- **Waveforms**



7-2. BLOCK DIAGRAM – CD SECTION –

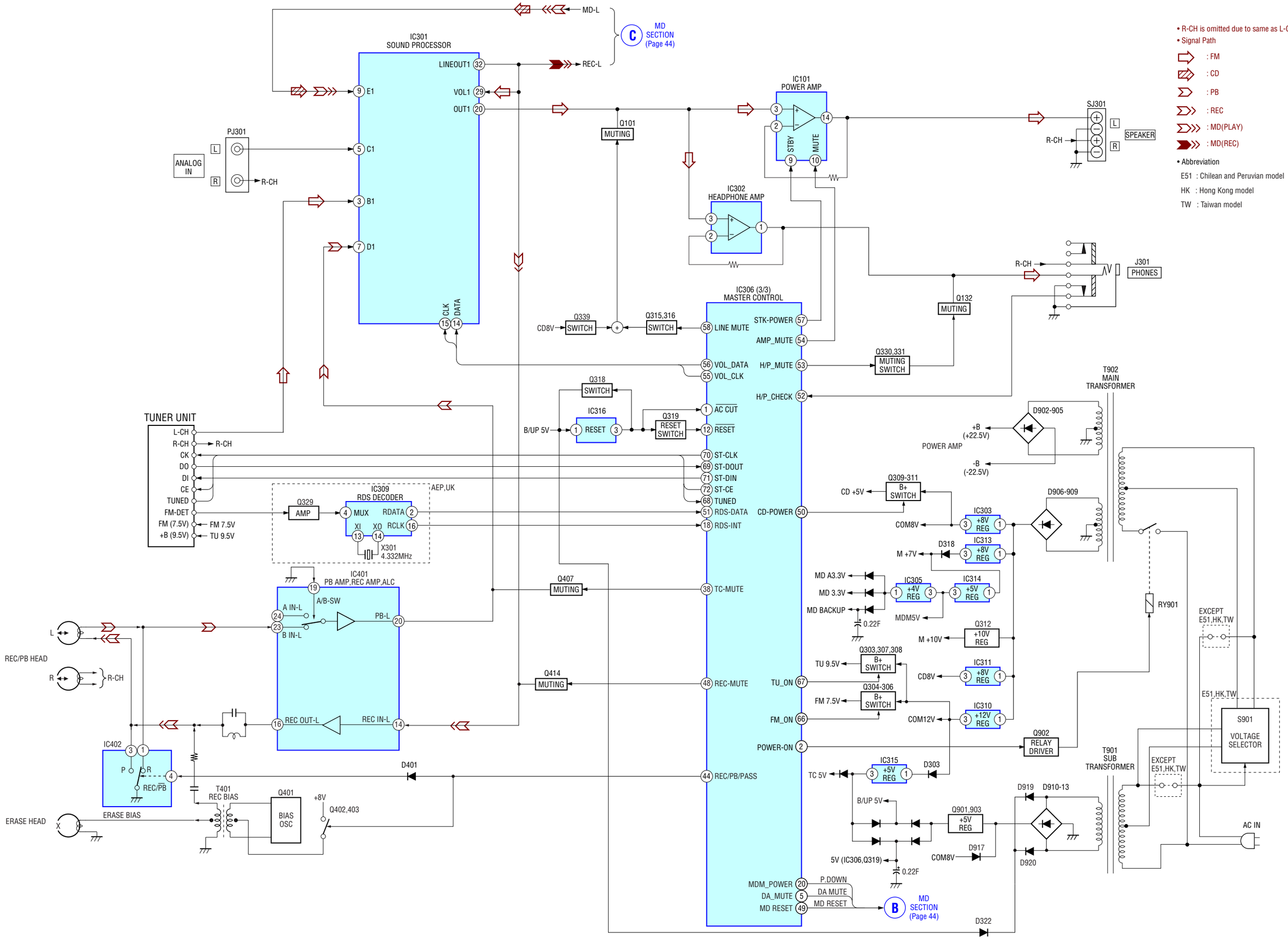


• Signal Path

: CD (DIGITAL)

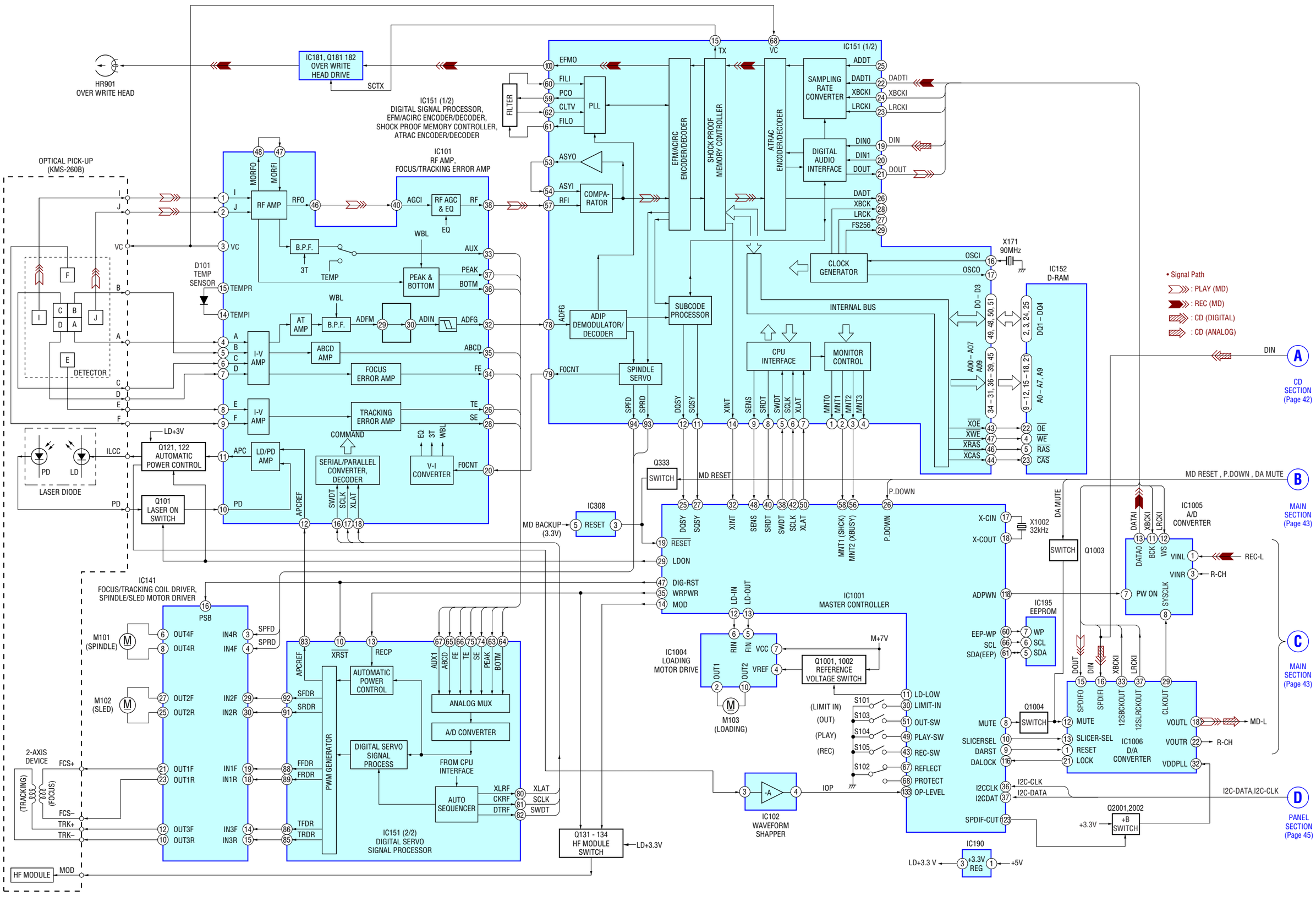
:DIGITAL IN (OPTICAL)

BLOCK DIAGRAM – MAIN SECTION –

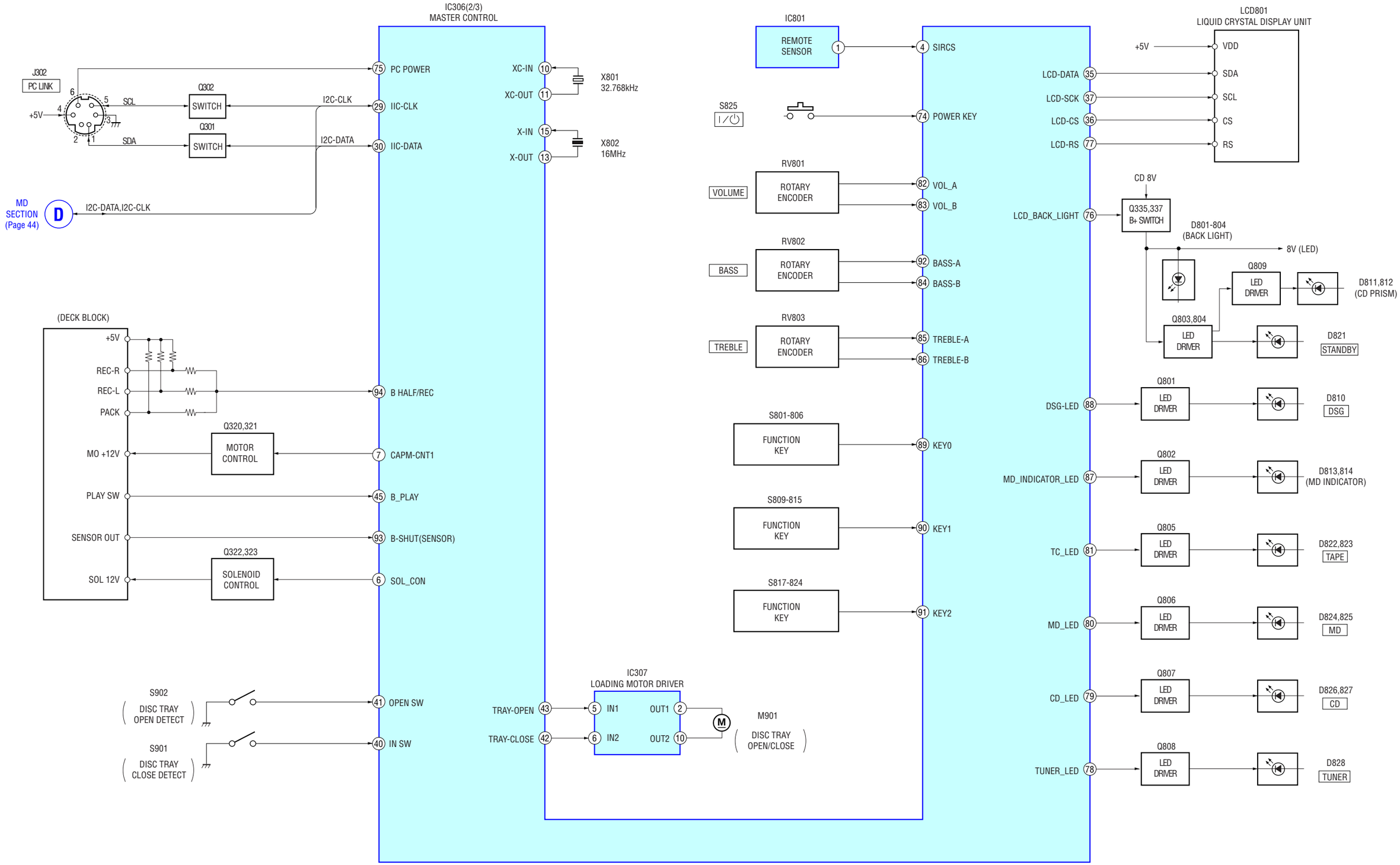


HCD-CP500K/CP500MD

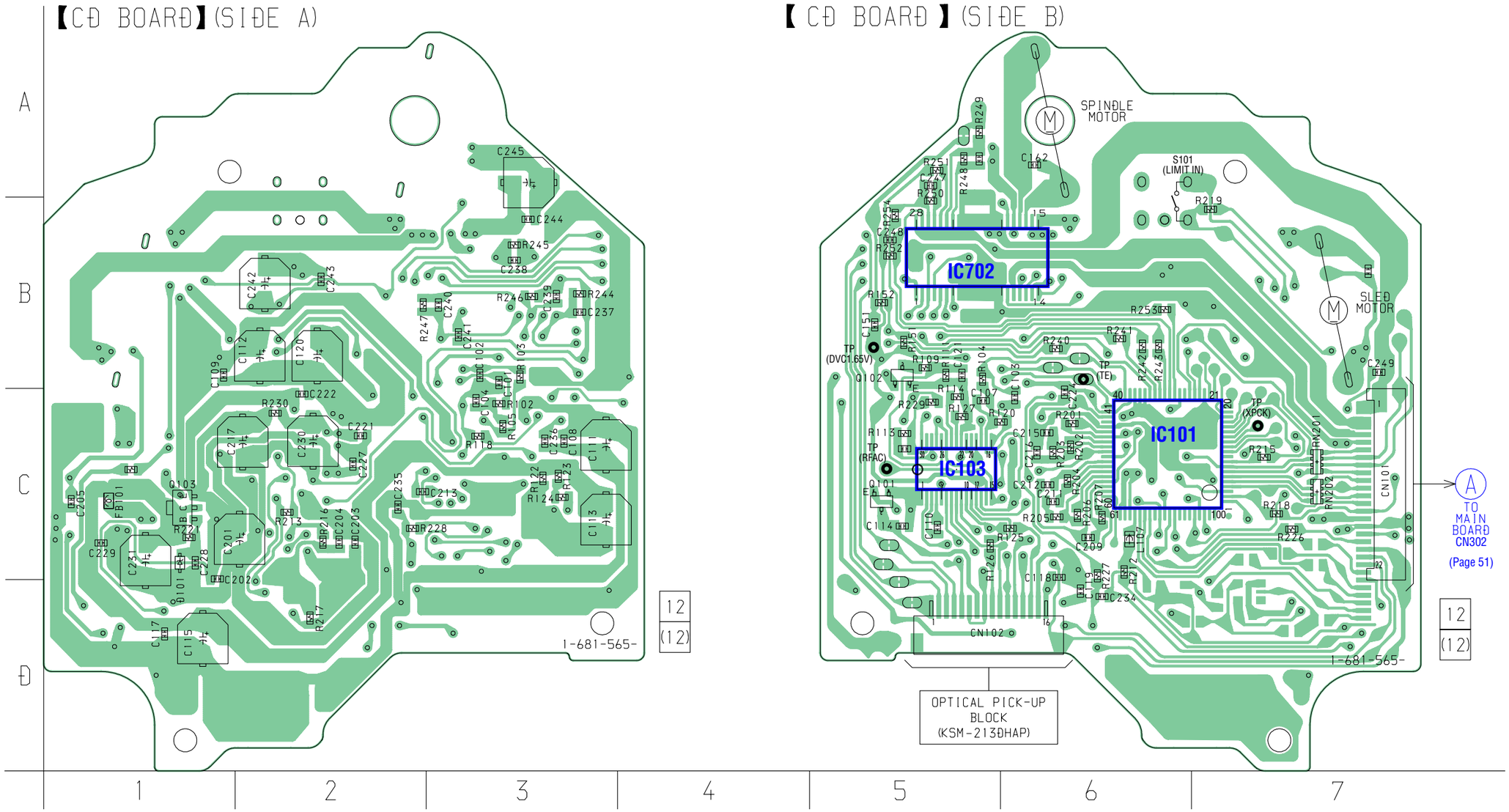
BLOCK DIAGRAM – MD SECTION –



BLOCK DIAGRAM – PANEL SECTION –



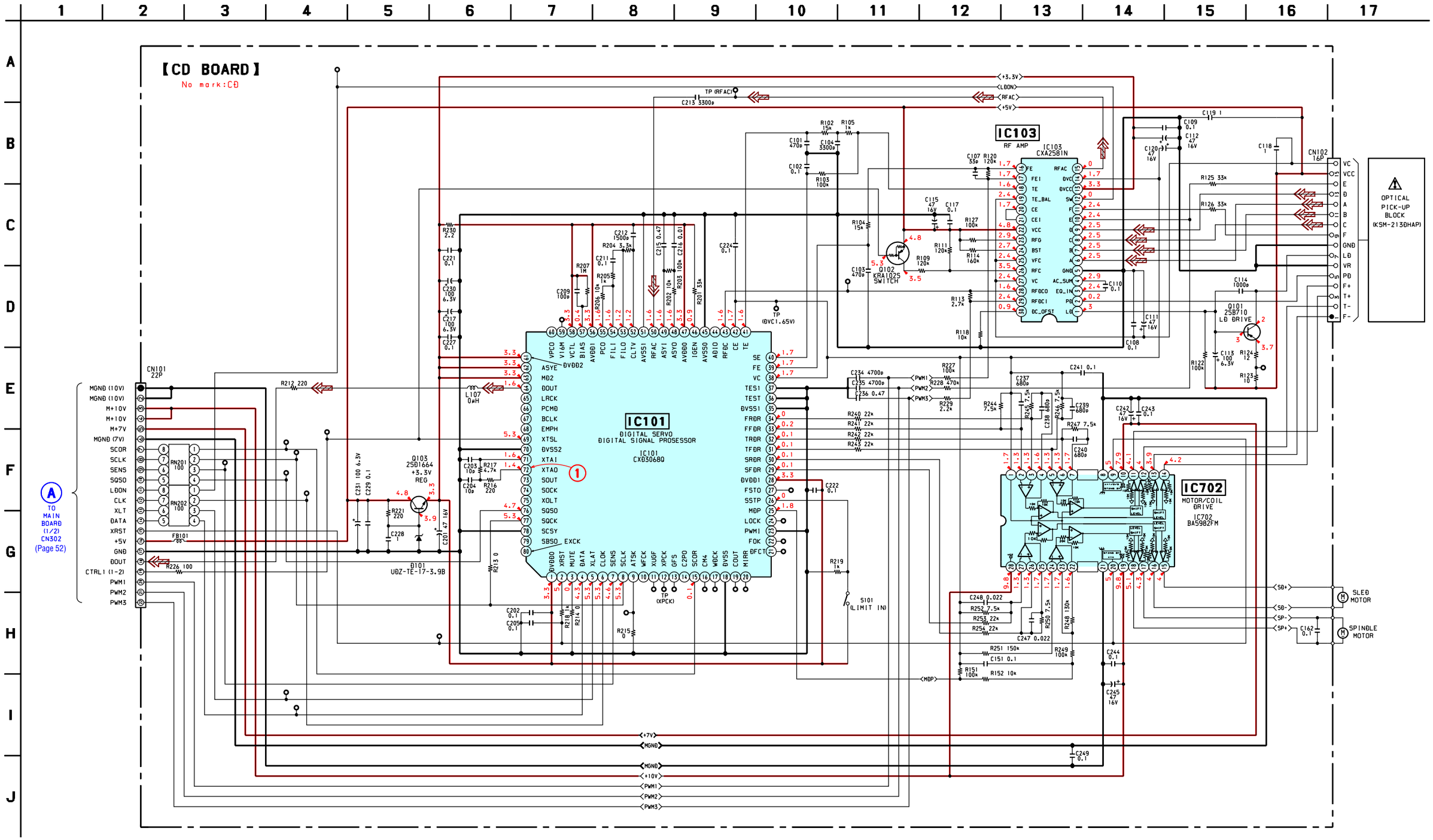
7-3. PRINTED WIRING BOARD – CD BOARD – • See page 30 for Circuit Boards Location.



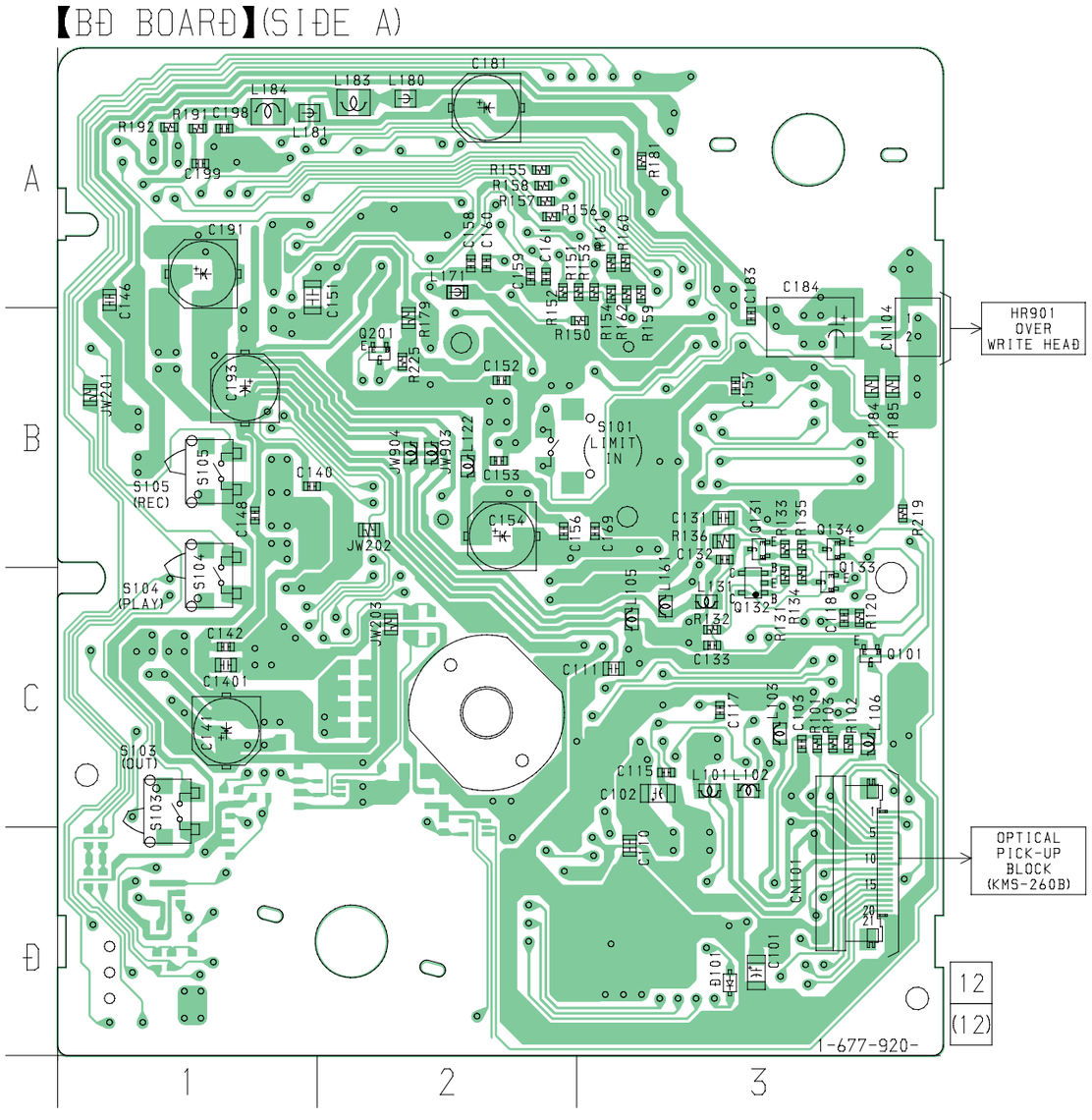
• **Semiconductor Location**

Ref. No.	Location
D101	D-1
IC101	C-6
IC103	C-5
IC702	B-5
Q101	C-5
Q102	B-5
Q103	C-1

7-4. SCHEMATIC DIAGRAM – CD BOARD –

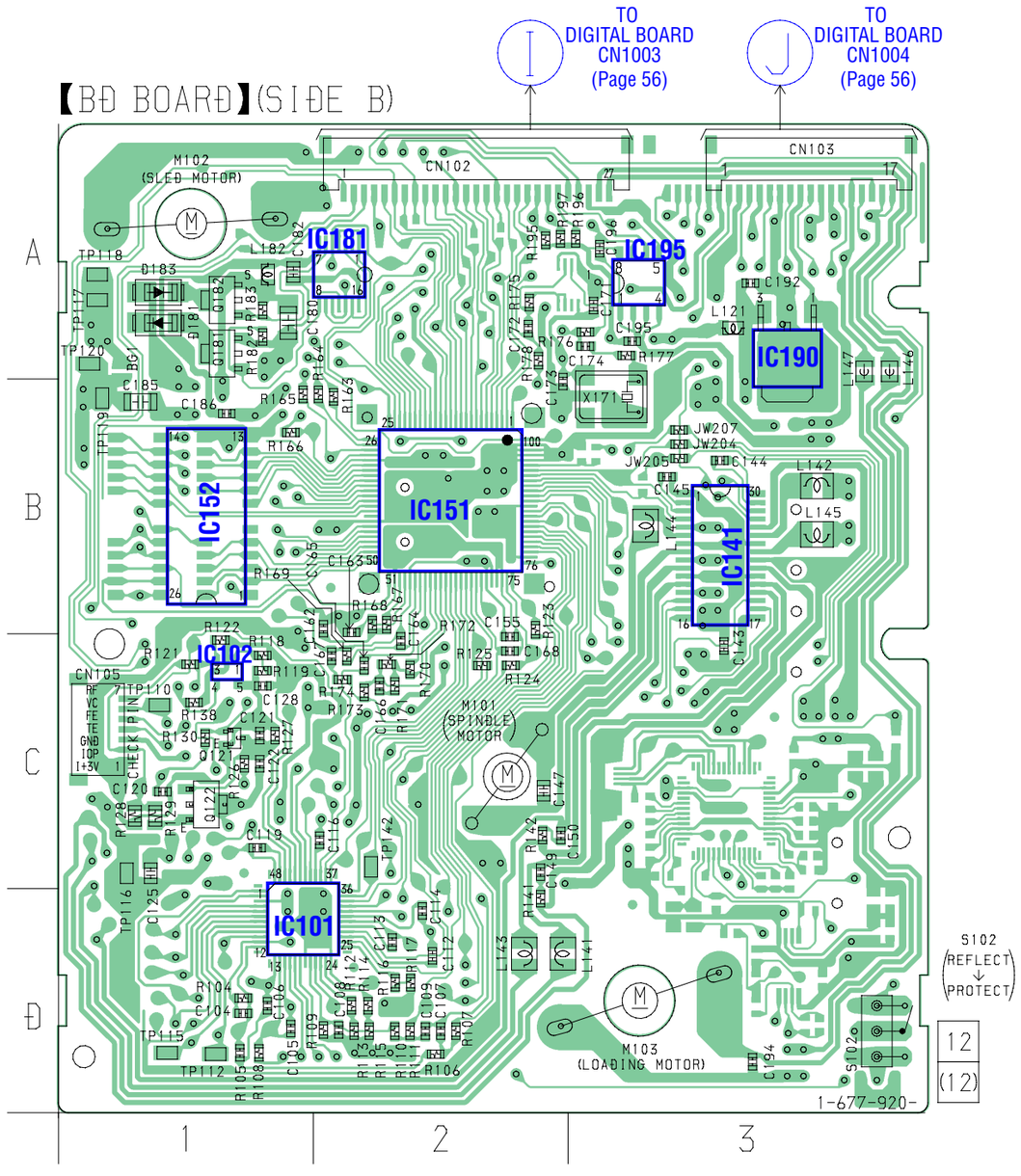


7-5. PRINTED WIRING BOARD – BD BOARD – • See page 30 for Circuit Boards Location.



• **Semiconductor Location SIDE A**

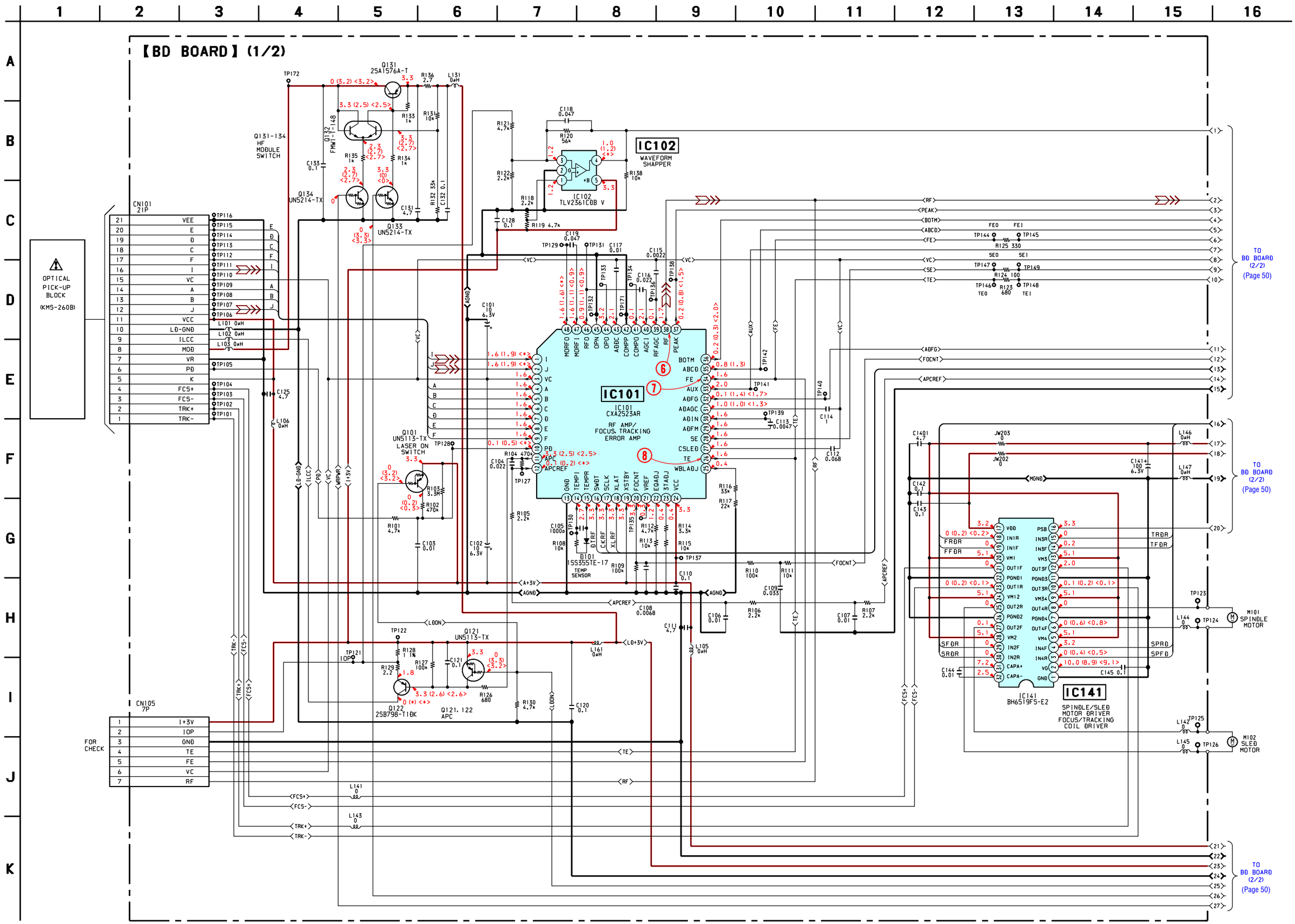
Ref. No.	Location
D101	D-3
Q101	C-3
Q131	B-3
Q132	C-3
Q133	B-3
Q134	B-3



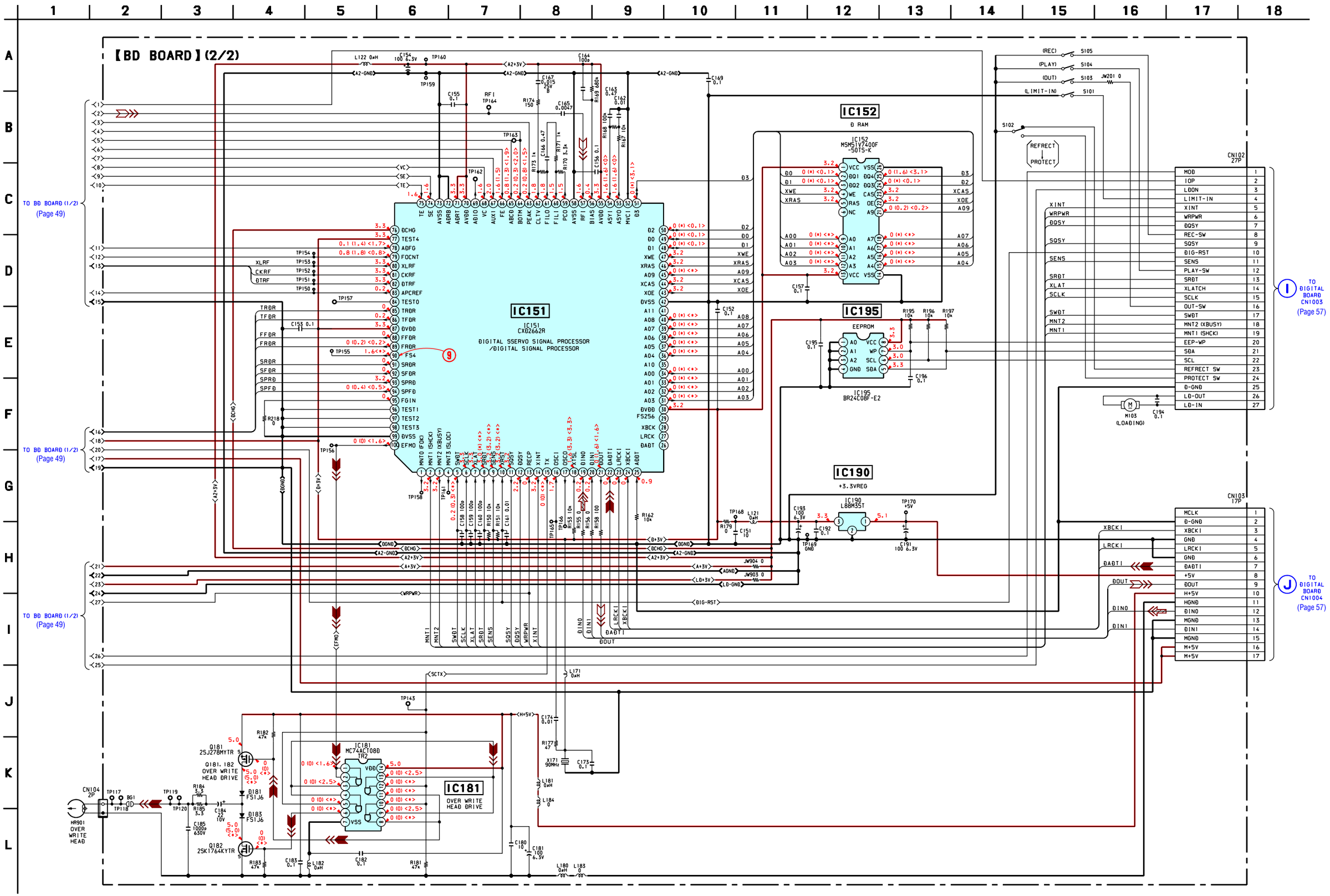
• **Semiconductor Location SIDE B**

Ref. No.	Location	Ref. No.	Location
D181	A-1	IC181	A-2
D183	A-1	IC190	A-3
		IC195	A-3
IC101	D-1		
IC102	C-1	Q121	C-1
IC141	B-3	Q122	C-1
IC151	B-2	Q181	A-1
IC152	B-1	Q182	A-1

7-6. SCHEMATIC DIAGRAM – BD BOARD (1/2) –

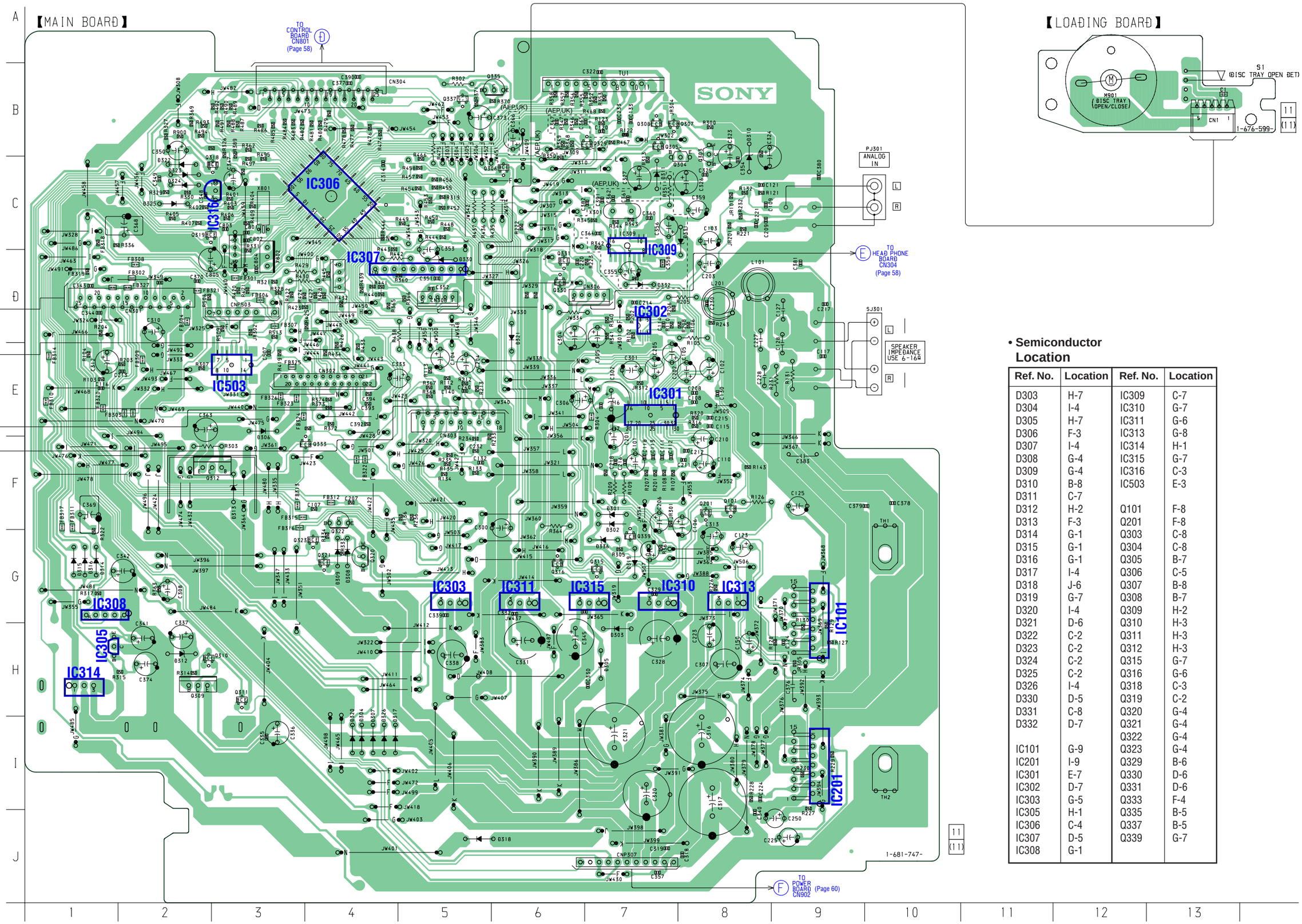


7-7. SCHEMATIC DIAGRAM – BD BOARD (2/2) –



7-8. PRINTED WIRING BOARDS – AUDIO SECTION –

• See page 30 for Circuit Boards Location.



• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D303	H-7	IC309	C-7
D304	I-4	IC310	G-7
D305	H-7	IC311	G-6
D306	F-3	IC313	G-8
D307	I-4	IC314	H-1
D308	G-4	IC315	G-7
D309	G-4	IC316	C-3
D310	B-8	IC503	E-3
D311	C-7		
D312	H-2	Q101	F-8
D313	F-3	Q201	F-8
D314	G-1	Q303	C-8
D315	G-1	Q304	C-8
D316	G-1	Q305	B-7
D317	I-4	Q306	C-5
D318	J-6	Q307	B-8
D319	G-7	Q308	B-7
D320	I-4	Q309	H-2
D321	D-6	Q310	H-3
D322	C-2	Q311	H-3
D323	C-2	Q312	H-3
D324	C-2	Q315	G-7
D325	C-2	Q316	G-6
D326	I-4	Q318	C-3
D330	D-5	Q319	C-2
D331	C-8	Q320	G-4
D332	D-7	Q321	G-4
		Q322	G-4
IC101	G-9	Q323	G-4
IC201	I-9	Q329	B-6
IC301	E-7	Q330	D-6
IC302	D-7	Q331	D-6
IC303	G-5	Q333	F-4
IC305	H-1	Q335	B-5
IC306	C-4	Q337	B-5
IC307	D-5	Q339	G-7
IC308	G-1		

7-9. SCHEMATIC DIAGRAM – AUDIO SECTION (1/2) –

【MAIN BOARD】(1/2)

No mark:FM
< >:CD
[ ]:TAPE
( ):MD

IC503 SN74LV00ANSR SELECTOR

IC306 MASTER CONTROL M30622MGA-A64FP

IC309 BU1924F RDS DECODER

IC B/D

TO CD BOARD CN101 (Page 47)

TO TC BOARD (Page 55)

TO CONTROL BOARD CN801 (Page 59)

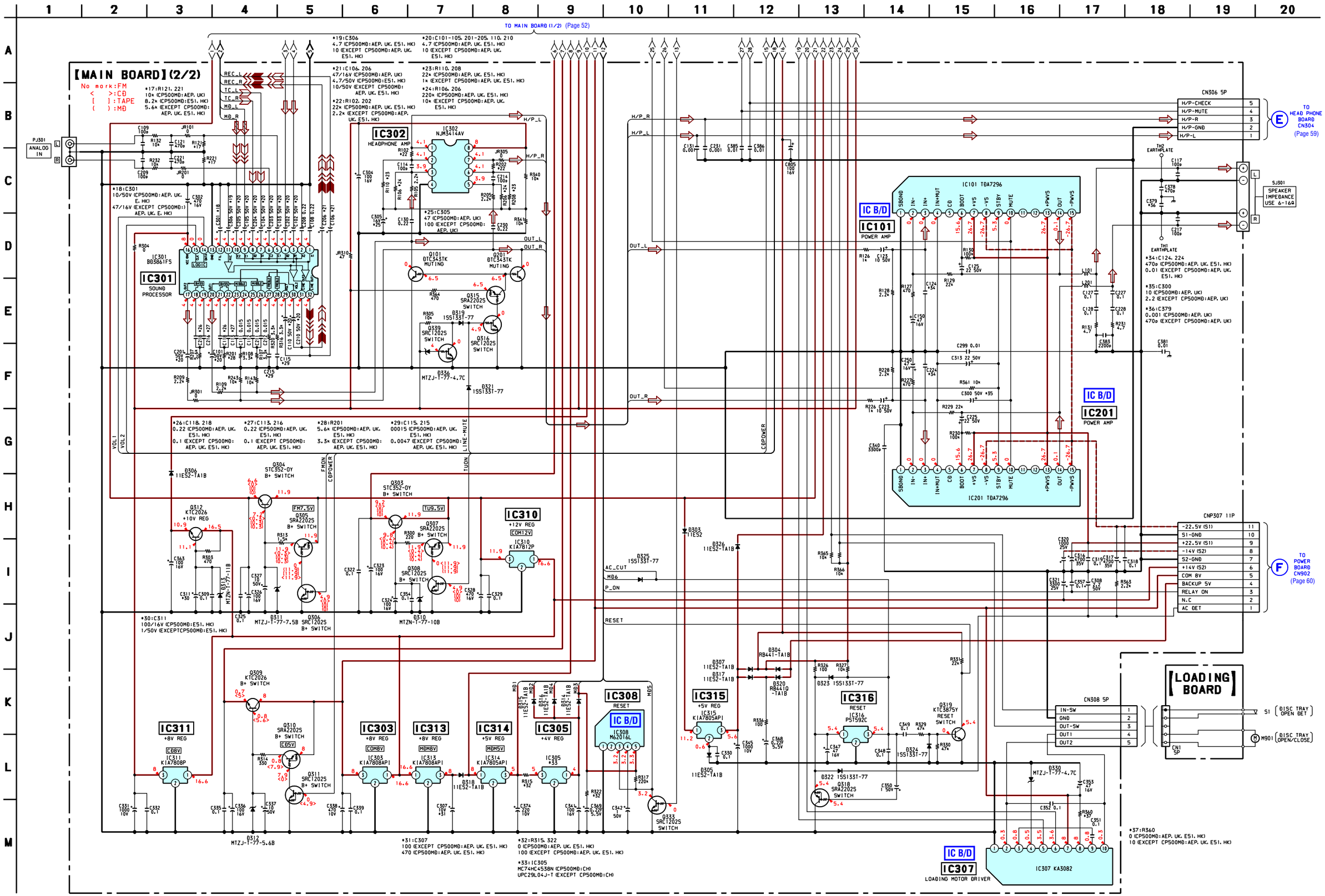
TO DIGITAL BOARD CN100 (Page 57)

TO OPTICAL BOARD CN551 (Page 59)

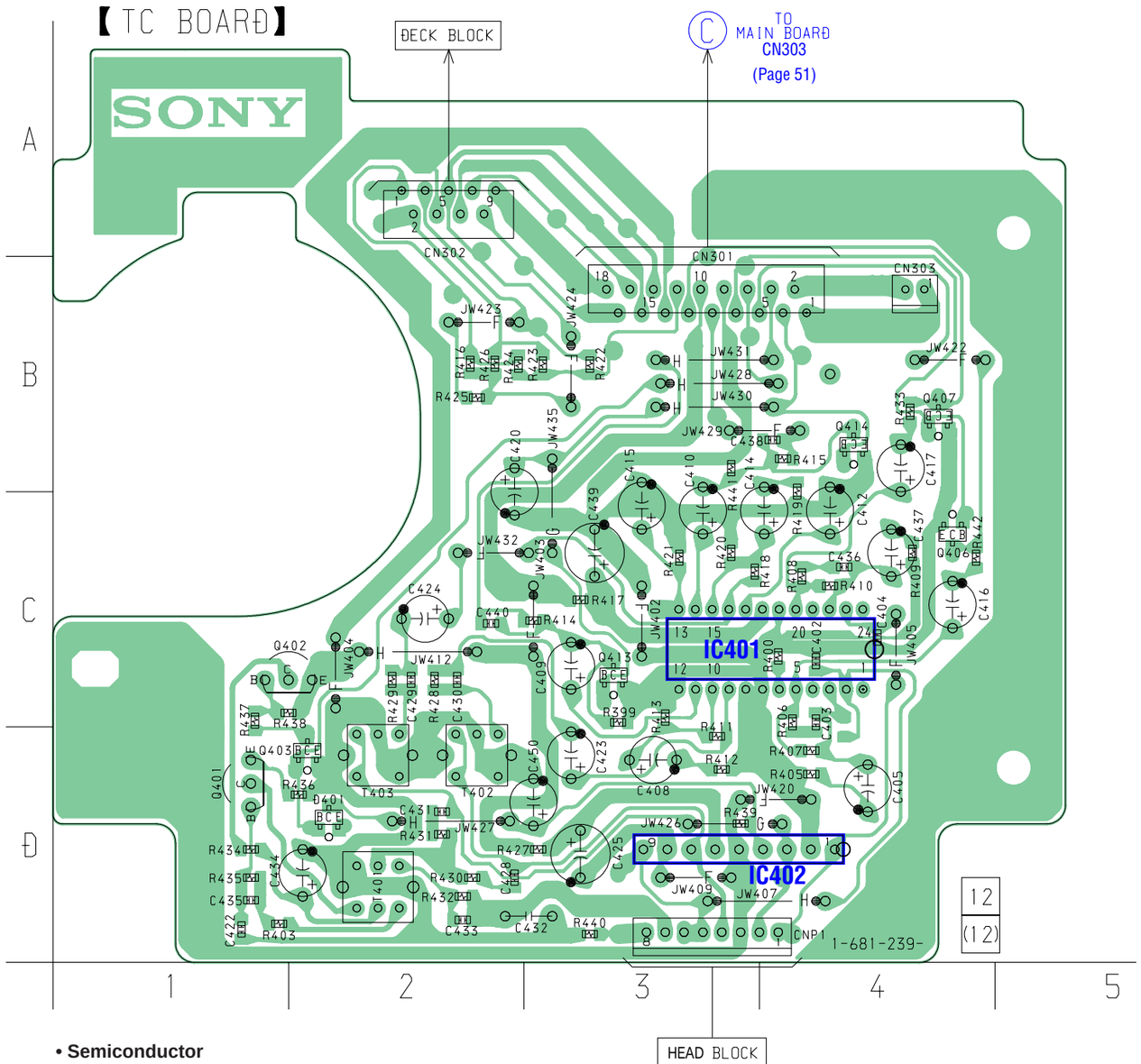
TO TUNER PACK

TO MAIN BOARD (2/2) (Page 53)

7-10. SCHEMATIC DIAGRAM – AUDIO SECTION (2/2) –



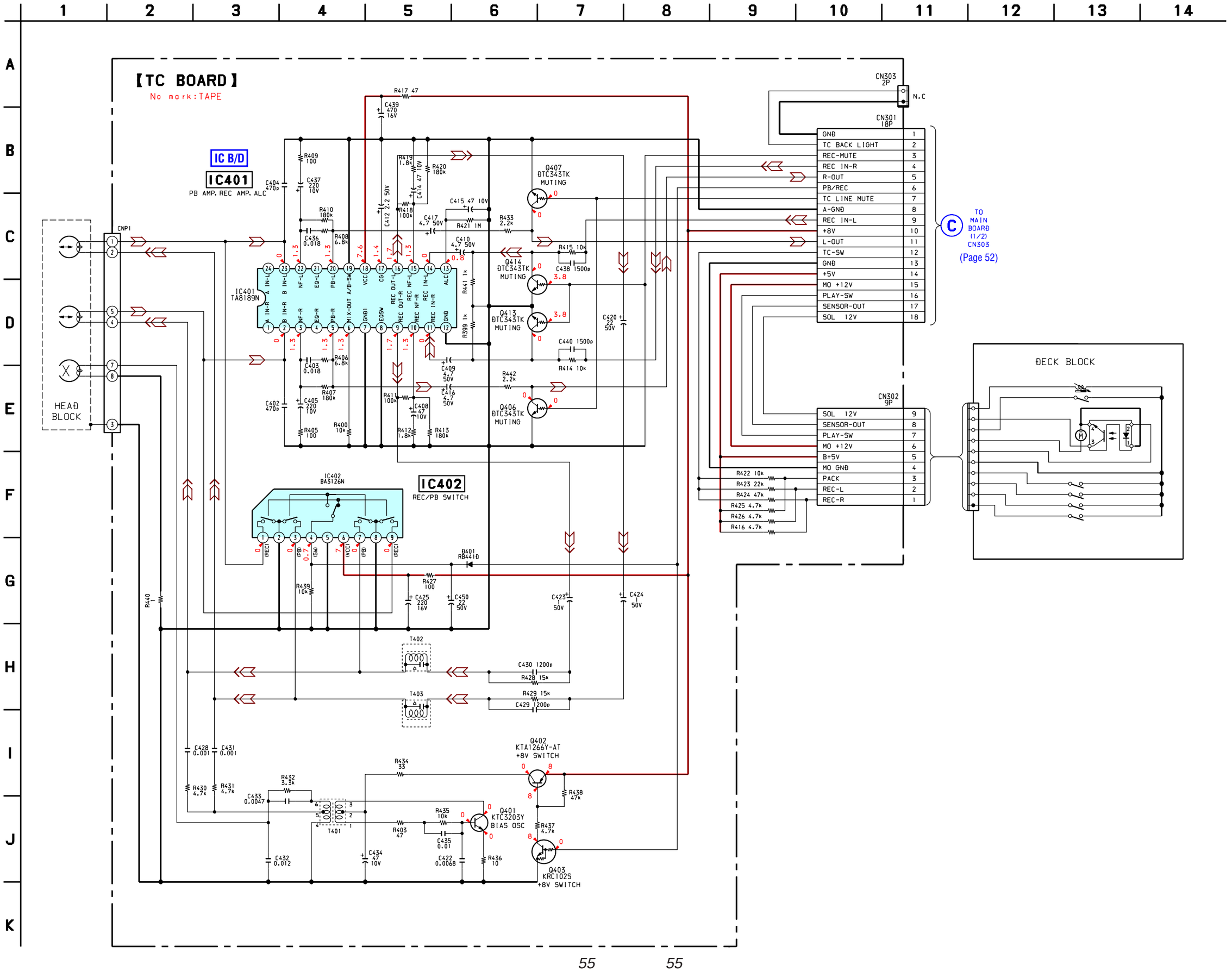
7-11. PRINTED WIRING BOARD – TC BOARD – • See page 30 for Circuit Boards Location.



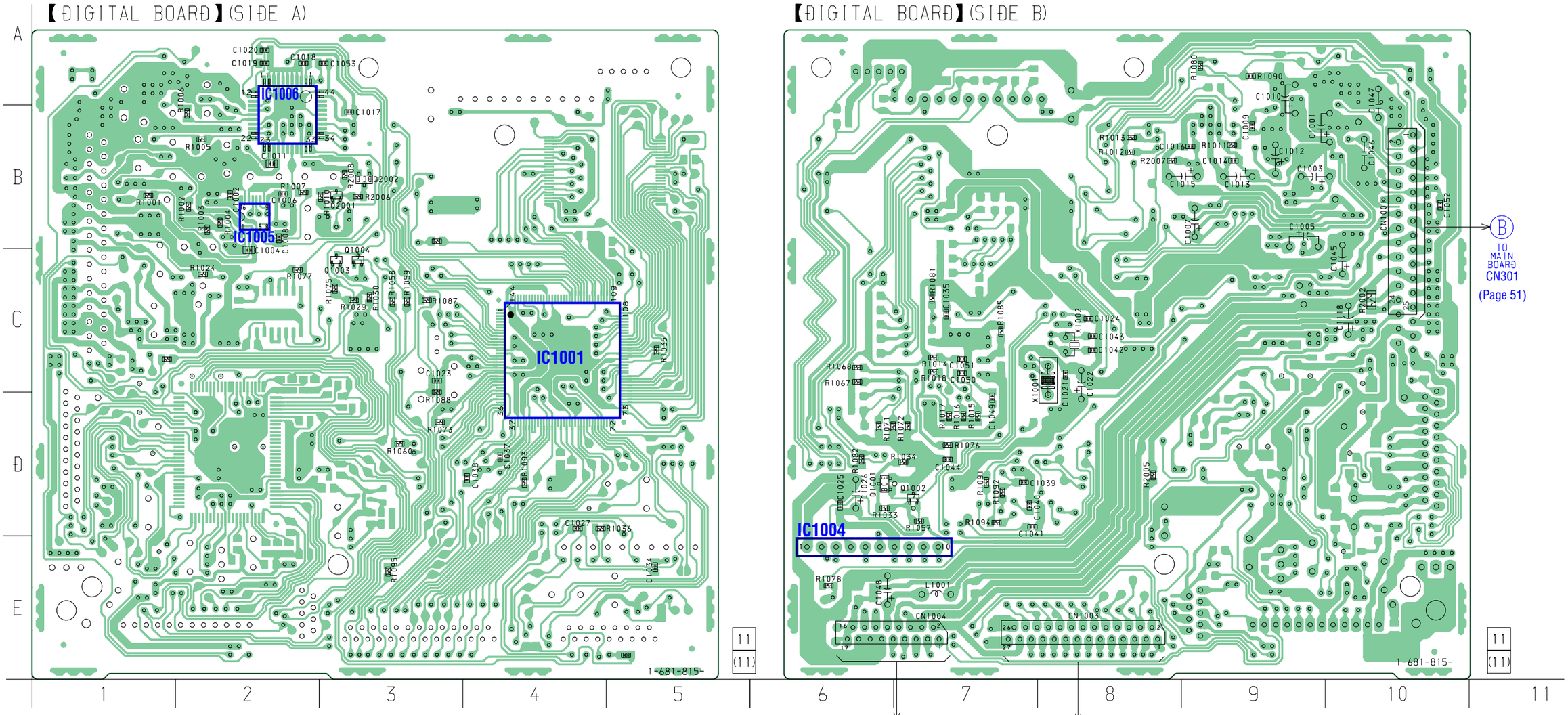
• **Semiconductor Location**

Ref. No.	Location
D401	D-2
IC401	C-4
IC402	D-3
Q401	D-1
Q402	C-2
Q403	D-1
Q406	C-4
Q407	B-4
Q413	C-3
Q414	B-4

7-12. SCHEMATIC DIAGRAM – TC BOARD –



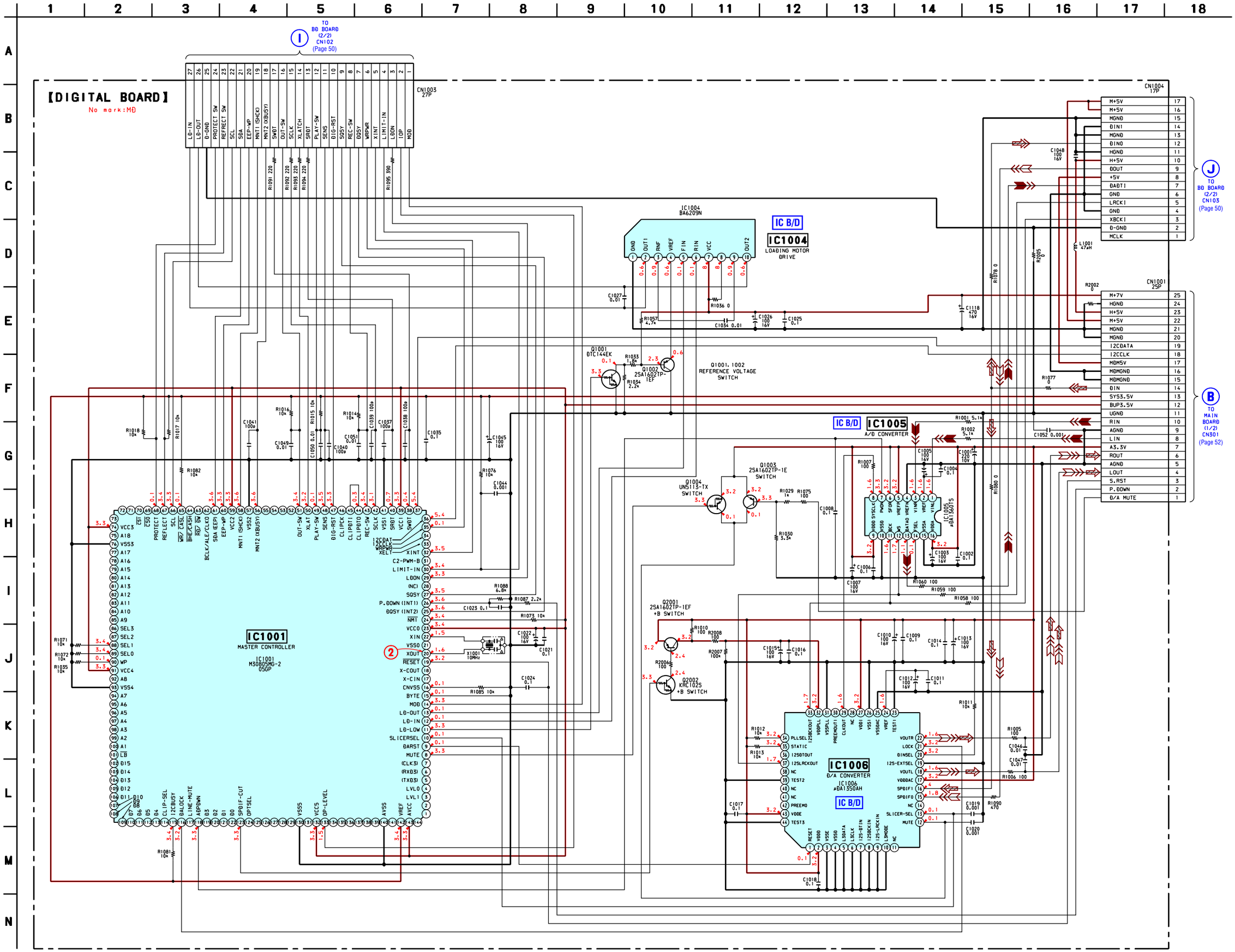
7-13. PRINTED WIRING BOARD – DIGITAL BOARD – • See page 30 for Circuit Boards Location.



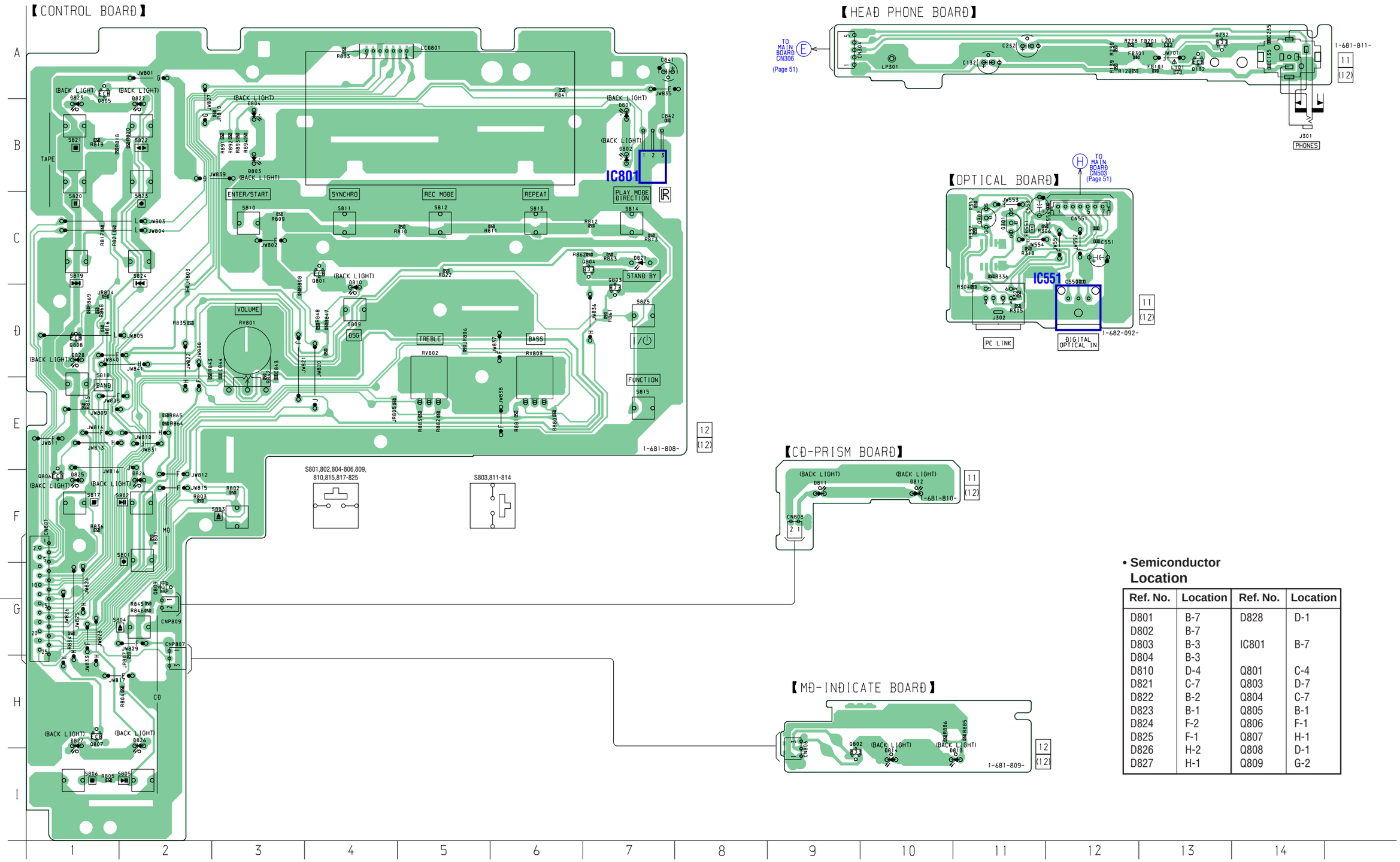
• **Semiconductor Location**

Ref. No.	Location
IC1001	C-4
IC1004	D-5
IC1005	B-2
IC1006	A-2
Q1001	D-6
Q1002	D-7
Q1003	C-3
Q1004	B-3
Q2001	B-3
Q2002	B-3

7-14. SCHEMATIC DIAGRAM – DIGITAL BOARD –



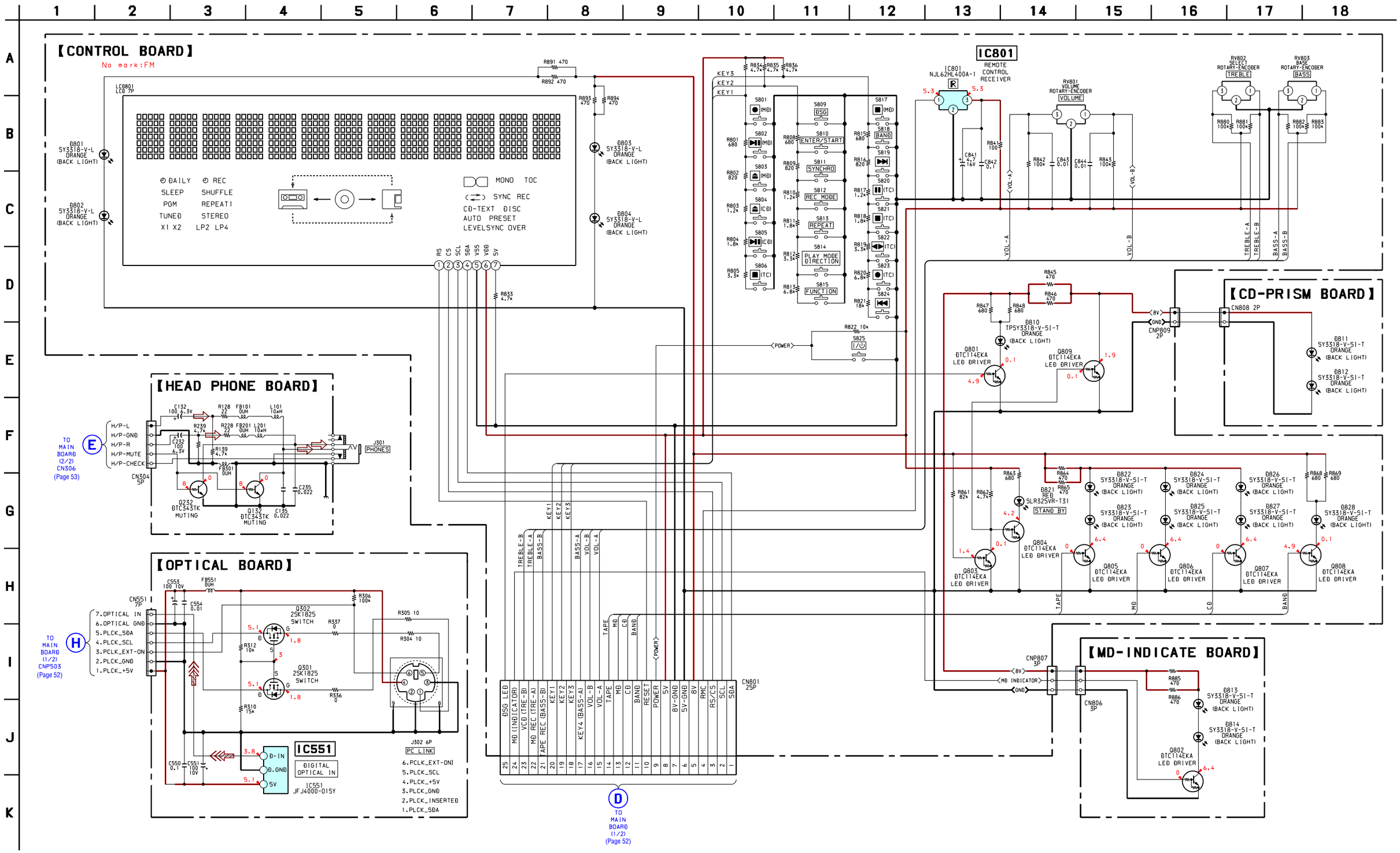
7-15. PRINTED WIRING BOARDS – CONTROL SECTION – • See page 30 for Circuit Boards Location.



- **Semiconductor Location**

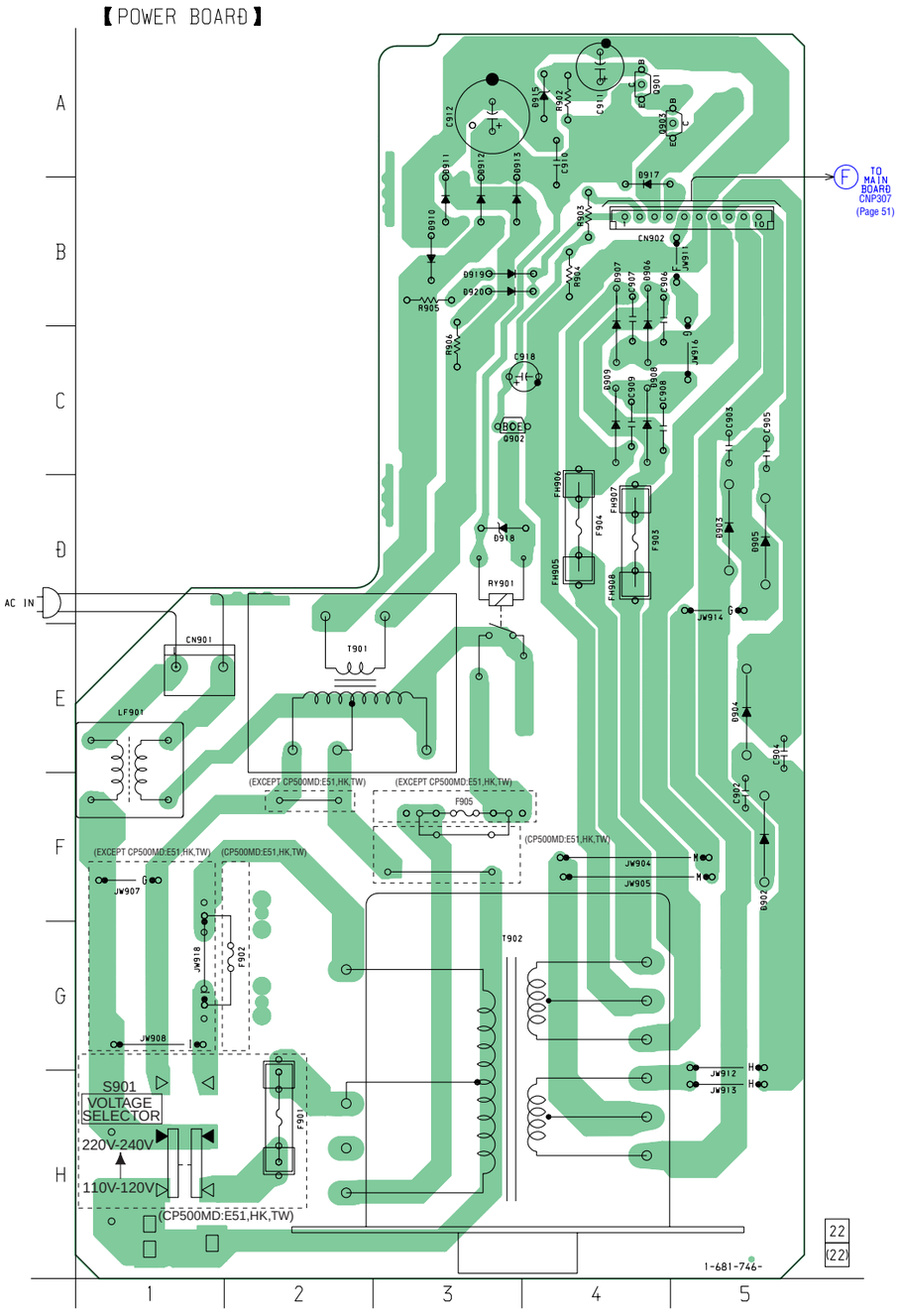
Ref. No.	Location	Ref. No.	Location
D801	B-7	D828	D-1
D802	B-7		
D803	B-3	IC801	B-7
D804	B-3		
D810	D-4	Q801	C-4
D821	C-7	Q803	D-7
D822	B-2	Q804	C-7
D823	B-1	Q805	B-1
D824	F-2	Q806	F-1
D825	F-1	Q807	H-1
D826	H-2	Q808	D-1
D827	H-1	Q809	G-2

7-16. SCHEMATIC DIAGRAM – CONTROL SECTION –

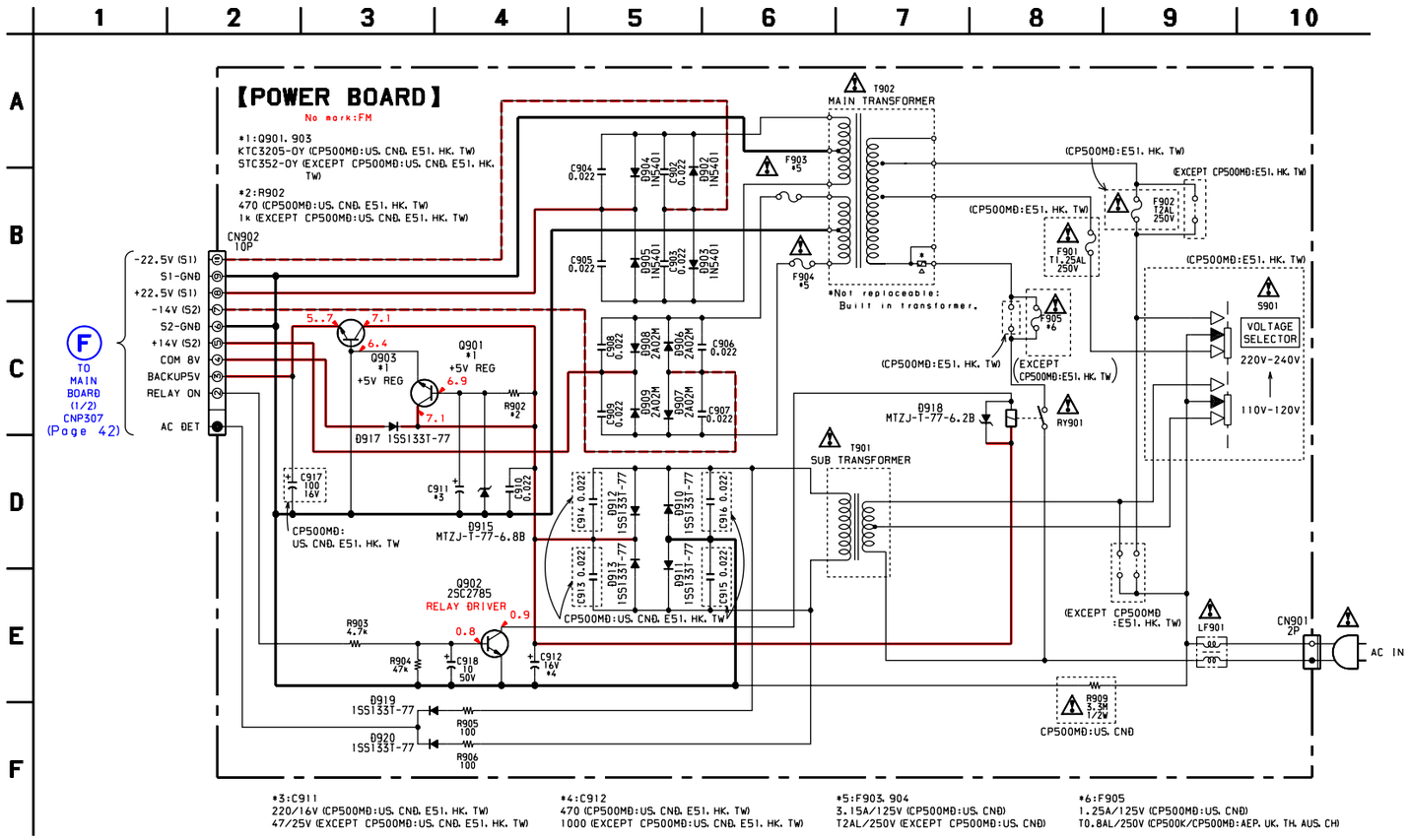


7-17. PRINTED WIRING BOARD – POWER BOARD –

• See page 30 for Circuit Boards Location.



7-18. SCHEMATIC DIAGRAM – POWER BOARD –

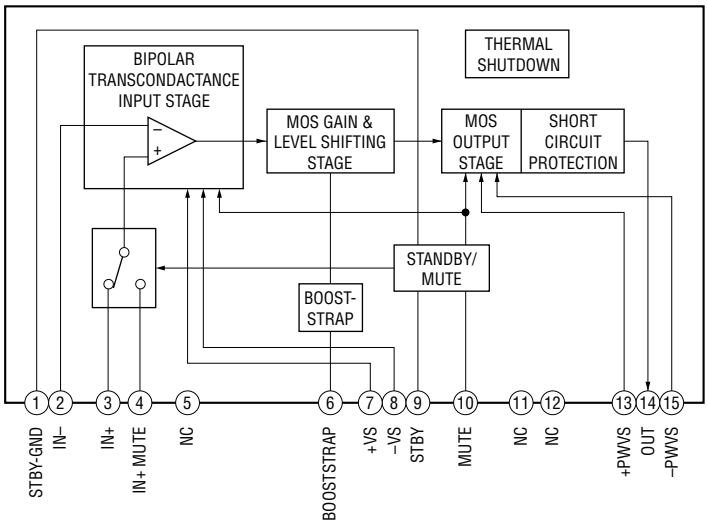


• **Semiconductor Location**

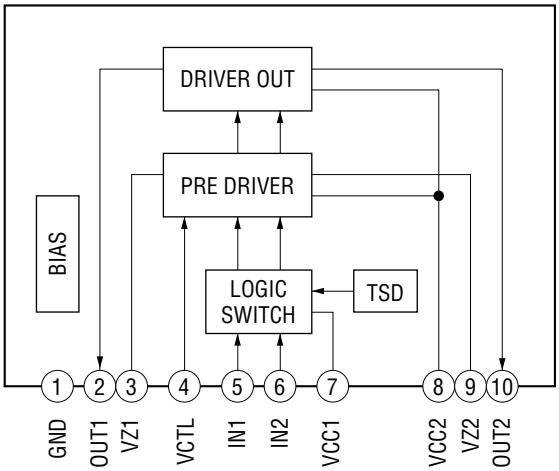
Ref. No.	Location	Ref. No.	Location
D902	F-5	D913	A-3
D903	D-5	D915	A-4
D904	E-5	D917	A-4
D905	D-5	D918	D-3
D906	B-4	D919	C-3
D907	B-4	D920	C-3
D908	C-4		
D909	C-4	Q901	A-4
D910	B-3	Q902	C-3
D911	A-3	Q903	A-4
D912	A-3		

7-19. IC BLOCK DIAGRAMS

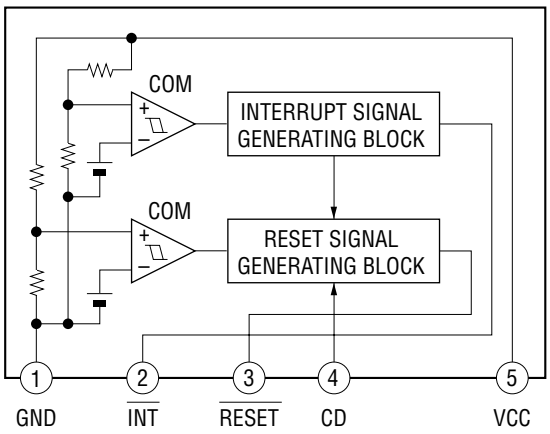
IC101, 201 TDA7296



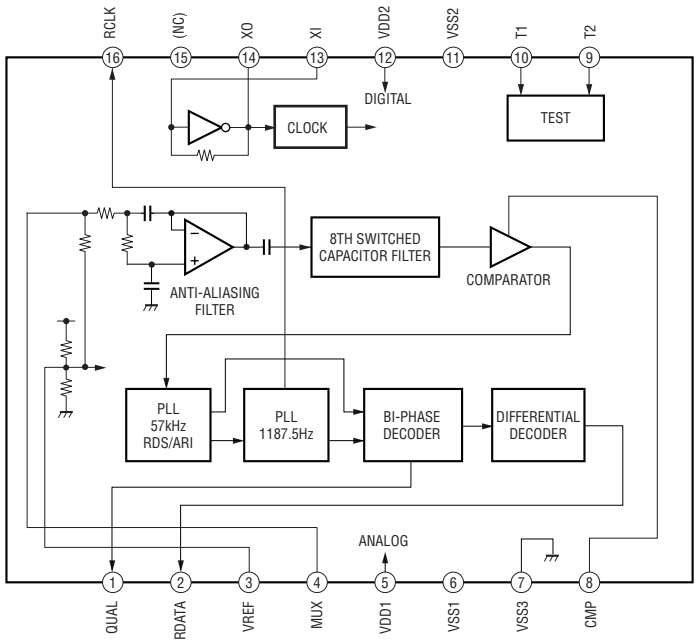
IC307 KA3082



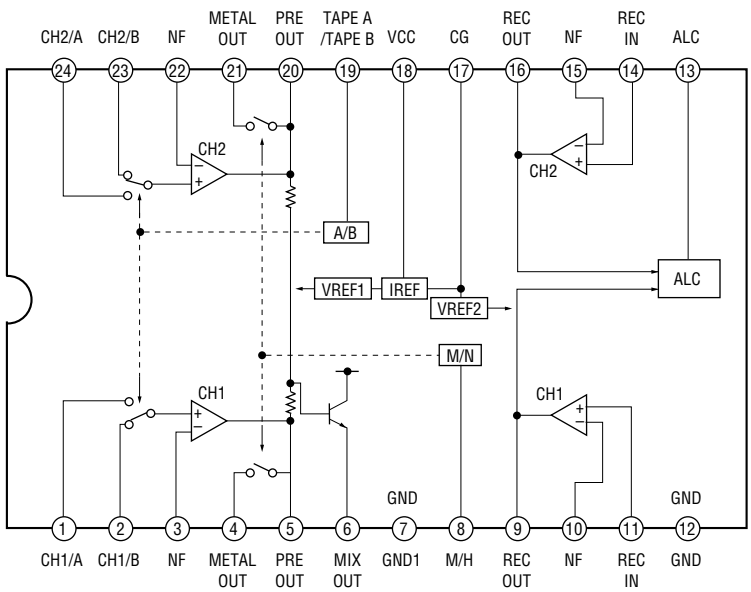
IC308 M62016L



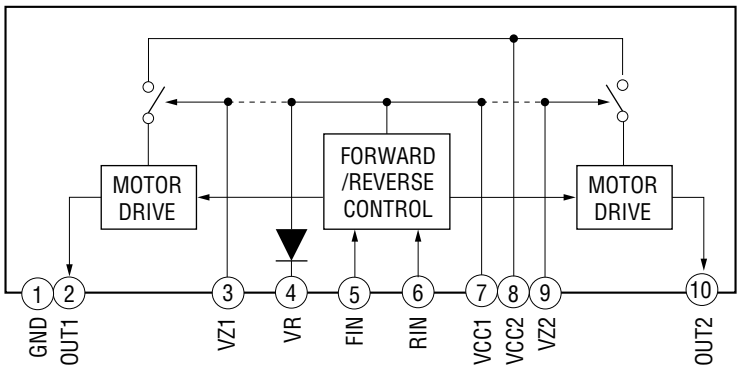
IC309 BU1924F



IC401 TA8189N



IC1004 BA6209N



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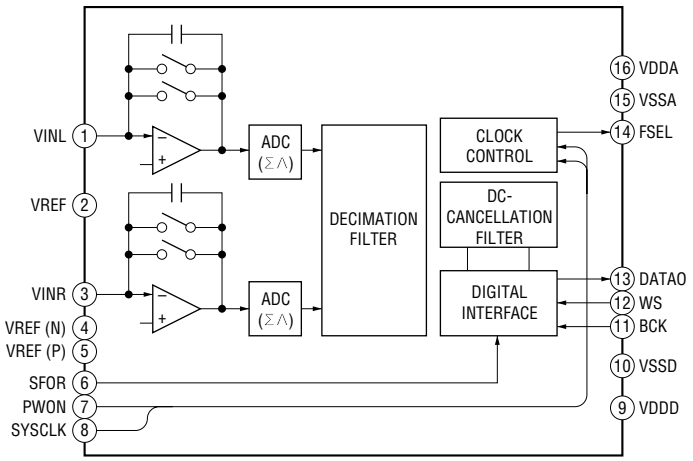
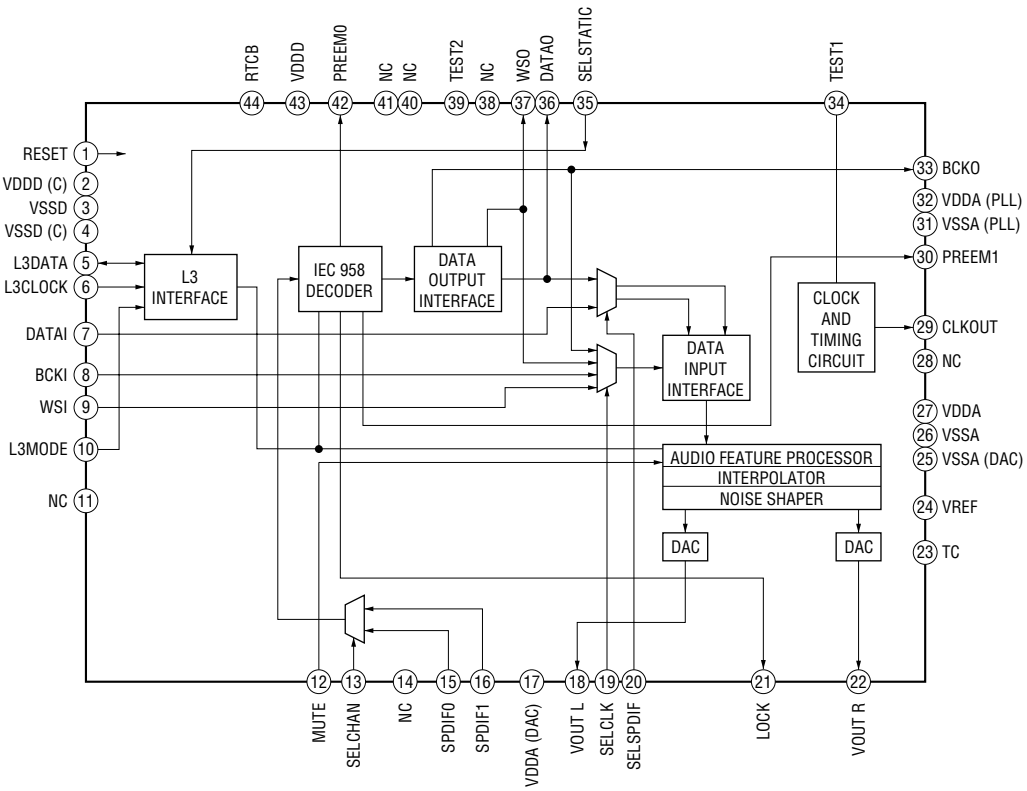


IC1006 μDA1350AH



7-20. IC PIN FUNCTION

• IC101 CXA2523AR RF AMPLLFLER (BD BOARD)

Pin No.	Pin Name	I/O	Description
1	I	I	I-V converted RF signal I input
2	J	I	I-V converted RF signal J input
3	VC	O	Middle point voltage (+1.5V) generation output
4 to 9	A to F	I	Signal input from the optical pick-up detector
10	PD	I	Light amount monitor input
11	APC	O	Laser APC output
12	APCREF	I	Reference voltage input for setting laser power
13	GND	—	Ground
14	TEMPI	I	Temperature sensor connection
15	TEMPR	O	Reference voltage output for the temperature sensor
16	SWDT	I	Serial data input from the CXD2662R
17	SCLK	I	Serial clock input from the CXD2662R
18	XLAT	I	Latch signal input from the CXD2662R “L”: Latch
19	XSTBY	I	Stand by signal input “L”: Stand by
20	F0CNT	I	Center frequency control voltage input of BPF22, BPF3T, EQ from the CXD2662R
21	VREF	O	Reference voltage output (Not used)
22	EQADJ	I/O	Center frequency setting pin for the internal circuit EQ
23	3TADJ	I/O	Center frequency setting pin for the internal circuit BPF3T
24	Vcc	—	+3V power supply
25	WBLADJ	I/O	Center frequency setting pin for the internal circuit BPF22
26	TE	O	Tracking error signal output to the CXD2662R
27	CSLED	—	External capacitor connection pin for the sled error signal LPF
28	SE	O	Sled error signal output to the CXD2662R
29	ADFM	O	FM signal output of ADIP
30	ADIN	I	ADIP signal comparator input ADFM is connected with AC coupling
31	ADAGC	—	External capacitor connection pin for AGC of ADIP
32	ADFG	O	ADIP duplex signal output to the CXD2662R
33	AUX	O	I3 signal/temperature signal output to the CXD2662R (Switching with a serial command)
34	FE	O	Focus error signal output to the CXD2662R
35	ABCD	O	Light amount signal output to the CXD2662R
36	BOTM	O	RF/ABCD bottom hold signal output to the CXD2662R
37	PEAK	O	RF/ABCD peak hold signal output to the CXD2662R
38	RF	O	RF equalizer output to the CXD2662R
39	RFAGC	—	External capacitor connection pin for the RF AGC circuit
40	AGCI	I	Input to the RF AGC circuit The RF amplifier output is input with AC coupling
41	COMPO	O	User comparator output (Not used)
42	COMPP	I	User comparator input (Fixed at “L”)
43	ADDC	I/O	External capacitor pin for cutting the low band of the ADIP amplifier
44	OPO	O	User operation amplifier output (Not used)
45	OPN	I	User operation amplifier inversion input (Fixed at “L”)
46	RFO	O	RF amplifier output
47	MORFI	I	Groove RF signal is input with AC coupling
48	MORFO	O	Groove RF signal output

• Abbreviation
APC: Auto Power Control
AGC: Auto Gain Control

• IC151 CXD2662R DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO SIGNAL PROCESSOR (BD BOARD)

Pin No.	Pin Name	I/O	Description
1	MNT0 (FOK)	O	Function FOK signal output to the system control (monitor output) “H” is output when focus is on (Not used)
2	MNT1 (SHCK)	O	Track jump detection signal output to the system control (monitor output)
3	MNT2 (XBUSY)	O	Monitor 2 output to the system control (monitor output)
4	MNT3 (SLOC)	O	Monitor 3 output to the system control (monitor output) (Not used)
5	SWDT	I	Writing data signal input from the system control
6	SCLK	I (S)	Serial clock signal input from the system control
7	XLAT	I (S)	Serial latch signal input from the system control
8	SRDT	O (3)	Reading data signal output to the system control
9	SENS	O (3)	Internal status (SENSE) output to the system control
10	XRST	I (S)	Reset signal input from the system control “L”: Reset
11	SQSY	O	Subcode Q sync (SCOR) output to the system control “L” is output every 13.3 msec. Almost all, “H” is output
12	DQSY	O	Digital In U-bit CD format or MD format subcode Q sync (SCOR) output to the system control
13	RECP	I	Laser power switching input from the system control “H”: Recording, “L”: Playback
14	XINT	O	Interrupt status output to the system control
15	TX	I	Recording data output enable input from the system control
16	OSCI	I	System clock input (512Fs=22.5792 MHz)
17	OSCO	O	System clock output (512Fs=22.5792 MHz) (Not used)
18	XTSL	I	System clock frequency setting “L”: 45.1584 MHz, “H”: 22.5792 MHz (Fixed at “H”)
19	DIN0	I	Digital audio input (Optical input)
20	DIN1	I	Digital audio input (Optical input) (Fixed at “L”)
21	DOUT	O	Digital audio output (Optical output) (Open)
22	DADTI	I	Serial data input (Fixed at “L”)
23	LRCKI	I	LR clock input “H” : Lch, “L” : R ch (Fixed at “L”)
24	XBCKI	I	Serial data clock input (Fixed at “L”)
25	ADDT	I	Data input from the A/D converter
26	DADT	O	Data output to the D/A converter (Not used)
27	LRCK	O	LR clock output for the A/D and D/A converter (44.1 kHz) (Not used)
28	XBCK	O	Bit clock output to the A/D and D/A converter (2.8224 MHz) (Not used)
29	FS256	O	11.2896 MHz clock output (Not used)
30	DVDD	—	+3V power supply (Digital)
31 to 34	A03 to A00	O	DRAM address output
35	A10	O	DRAM address output (Not used)
36 to 40	A04 to A08	O	DRAM address output
41	A11	O	DRAM address output (Not used)
42	DVSS	—	Ground (Digital)
43	XOE	O	Output enable output for DRAM
44	XCAS	O	$\overline{\text{CAS}}$ signal output for DRAM
45	A09	O	Address output for DRAM
46	XRAS	O	$\overline{\text{RAS}}$ signal output for DRAM
47	XWE	O	Write enable signal output for DRAM

* I (S) stands for Schmidt input, I (A) for analog input, O (3) for 3-state output, and O (A) for analog output in the column I/O

Pin No.	Pin Name	I/O	Description
48	D1	I/O	Data input/output for DRAM
49	D0	I/O	
50, 51	D2, D3	I/O	
52	MVCI	I (S)	Clock input from an external VCO (Fixed at “L”)
53	ASYO	O	Playback EFM duplex signal output
54	ASYI	I (A)	Playback EFM comparator slice level input
55	AVDD	—	+3V power supply (Analog)
56	BIAS	I (A)	Playback EFM comparator bias current input
57	RFI	I (A)	Playback EFM RF signal input
58	AVSS	—	Ground (Analog)
59	PCO	O (3)	Phase comparison output for the recording/playback EFM master PLL
60	FILI	I (A)	Filter input for the recording/playback EFM master PLL
61	FILO	O (A)	Filter output for the recording/playback EFM master PLL
62	CLTV	I (A)	Internal VCO control voltage input for the recording/playback EFM master PLL
63	PEAK	I (A)	Light amount signal peak hold input from the CXA2523AR
64	BOTM	I (A)	Light amount signal bottom hold input from the CXA2523AR
65	ABCD	I (A)	Light amount signal input from the CXA2523AR
66	FE	I (A)	Focus error signal input from the CXA2523AR
67	AUX1	I (A)	Auxiliary A/D input
68	VC	I (A)	Middle point voltage (+1.5V) input from the CXA2523AR
69	ADIO	O (A)	Monitor output of the A/D converter input signal (Not used)
70	AVDD	—	+3V power supply (Analog)
71	ADRT	I (A)	A/D converter operational range upper limit voltage input (Fixed at “H”)
72	ADRB	I (A)	A/D converter operational range lower limit voltage input (Fixed at “L”)
73	AVSS	—	Ground (Analog)
74	SE	I (A)	Sled error signal input from the CXA2523AR
75	TE	I (A)	Tracking error signal input from the CXA2523AR
76	DCHG	I (A)	Connected to +3V power supply
77	APC	I (A)	Error signal input for the laser digital APC (Fixed at “L”)
78	ADFG	I (S)	ADIP duplex FM signal input from the CXA2523AR (22.05 ± 1 kHz)
79	F0CNT	O	Filter f0 control output to the CXA2523AR
80	XLRF	O	Control latch output to the CXA2523AR
81	CKRF	O	Control clock output to the CXA2523AR
82	DTRF	O	Control data output to the CXA2523AR
83	APCREF	O	Reference PWM output for the laser APC
84	TEST0	O	PWM output for the laser digital APC (Not used)
85	TRDR	O	Tracking servo drive PWM output (–)

- Abbreviation
  EFM: Eight to Fourteen Modulation
  PLL : Phase Locked Loop
  VCO: Voltage Controlled Oscillator

Pin No.	Pin Name	I/O	Description
86	TFDR	O	Tracking servo drive PWM output (+)
87	DVDD	—	+3V power supply (Digital)
88	FFDR	O	Focus servo drive PWM output (+)
89	FRDR	O	Focus servo drive PWM output (–)
90	FS4	O	176.4 kHz clock signal output (X'tal) (Not used)
91	SRDR	O	Sled servo drive PWM output (–)
92	SFDR	O	Sled servo drive PWM output (+)
93	SPRD	O	Spindle servo drive PWM output (–)
94	SPFD	O	Spindle servo drive PWM output (+)
95	FGIN	I (S)	Test input (Fixed at "L")
96 to 98	TEST1 to TEST3	I	
99	DVSS	—	Ground (Digital)
100	EFMO	O	EFM output when recording

• Abbreviation
EFM: Eight to Fourteen Modulation

• IC306 M30622MGA-A44FP MASTER CONTROL (MAIN BOARD)

Pin No.	Pin Name	I/O	Description
1	AC-CUT	I	AC CUT ON/OFF check signal input (L=ON,H=OFF)
2	POWER-ON	O	Power relay ON/OFF signal output (H=ON,L=OFF)
3	XTSL	O	XTSL signal output for IC101
4	SIRCS	I	Remote control receiver data signal input
5	DA_MUTE	O	D/A (MD) muting control signal output
6	SOL_CON	O	Solenoid(TC) control signal output (H=ON,L=OFF)
7	CAPM-CNT1	O	Capstan motor control signal output (H=REV,L=FWD,L=STOP)
8	BYTE	—	Not used (ground)
9	CNVSS	—	Connected ground
10	XCIN	I	Sub clock input
11	XCOUT	O	Sub clock output
12	RESET	I	System reset signal input
13	XOUT	O	Main system clock output
14	VSS	—	Ground
15	XIN	I	Main system clock input (16MHz)
16	VCC	—	Power supply (+5V)
17	NMI	I	Not used (connected to Vcc)
18	RDS-INT	I	RDS interrupt signal input
19	CD-SCOR	I	CD Q-data request signal input
20	MDM_POWER	O	MD P-DOWN control signal output
21	OPT-SEL	O	Optical select signal output
22	CD-XLT	O	CD latch signal output
23	CD-SENS	I	CD sense signal input
24	BU_PWM3	O	BU PWM3 signal output
25	LD_ON	O	CD LD ON signal output
26	BU_PWM2	O	BU PWM2 signal output
27	CD-CLK	O	CD clock signal output
28	BU_PWM1	O	BU PWM1 signal output
29	IIC_CLK	O	IIC clock signal output
30	IIC_DATA	O	IIC data signal output
31	FLS_SO	—	Not used (open)
32	SQ-DATA-IN	I	CD SQ data signal input
33	SQ-CLK	O	CD SQ clock signal output
34	CD-DATA	O	CD data signal output
35	LCD-DATA	O	LCD data signal output
36	LCD-CS	O	LCD CS signal output
37	LCD-SCK	O	LCD clock signal output
38	TC-MUTE	O	Tape deck line muting signal output (H=ON,L=OFF)
39	CD_XRST	O	CD reset signal output
40	IN SW	I	Tray close detect signal input
41	OPEN SW	I	Tray open detect signal input
42	TRAY-CLOSE	O	Loading motor control signal output
43	TRAY-OPEN	O	Loading motor control signal output
44	REC/PB/PASS	O	REC/PB/PASS select signal output
45	B_PLAY	I	B deck play signal input
46	OPT-SEL	—	Not used (Fixed at “H”)
47	(DOLBY-ON)	—	Not used
48	REC MUTE	O	TC REC muting ON/OFF signal output
49	MD RESET	O	MD reset signal output
50	CD-POWER	O	CD power control signal output (H=ON,L=OFF)
51	RDS-DATA	I	RDS data signal input

Pin No.	Pin Name	I/O	Description
52	H/P_CHECK	I	Headphone detect signal input
53	H/P_MUTE	O	Headphone muting control signal output
54	AMP_MUTE	O	Power amplifier muting control signal output (L=ON,H=OFF)
55	VOL_CLK	O	Volume clock signal output
56	VOL_DATA	O	Volume data signal output
57	STK_POWER	O	Power amplifier ON/OFF signal output (H=ON,L=OFF)
58	LINE-MUTE	O	Line muting control signal output (H=ON,L=OFF)
59	NC	—	Not used
60	NC	—	Not used
61	NC	—	Not used
62	VCC	—	Power supply (+5V)
63	NC	—	Not used
64	VSS	—	Ground
65	NC	—	Not used
66	FM_ON	O	FM ON/OFF signal output (H=ON,L=OFF)
67	TU_ON	O	Tuner power ON/OFF signal output (H=ON,L=OFF)
68	TUNED	I	TUNED detect signal input
69	ST_DOUT	I	Tuner data signal input
70	ST_CLK	O	Tuner clock output
71	ST_DIN	O	Tuner data signal output
72	ST_CE	O	Tuner chip enable output
73	NC	—	Not used
74	POWER_KEY	I	Power key detect signal input
75	PC_POWER	I	PC power detect signal input for PC LINK
76	LCD_BACK_LIGHT	O	LCD back light LED control signal output
77	LCD-RS	O	LCD reset signal output
78	TUNER-LED	O	Tuner LED control signal output
79	CD_LED	O	CD LED control signal output
80	MD_LED	O	MD LED control signal output
81	TC_LED	O	TC LED control signal output
82	VOL_A	I	Volume signal input from rotary encoder
83	VOL_B	I	Volume signal input from rotary encoder
84	BASS-B	I	BASS signal input from rotary encoder
85	TREBLE-A	I	TREBLE signal input from rotary encoder
86	TREBLE-B	I	TREBLE signal input from rotary encoder
87	MD_INDICATOR_LED	O	MD INDICATOR LED control signal output
88	DSG-LED	O	DSG LED control signal output
89	KEY0	I	Key input signal from function switch
90	KEY1	I	Key input signal from function switch
91	KEY2	I	Key input signal from function switch
92	BASS-A	I	BASS signal input from rotary encoder
93	B-SHUT(SENSOR)	I	B deck reel pulse signal input
94	B_HALF/REC	I	B deck half detect signal input
95	MODEL_IN	I	Model input
96	AG	—	Analog ground
97	SPEC_IN	I	Version select input
98	VREF	—	Analog voltage reference
99	AVCC	—	Analog power supply
100	SOFT_TEST	O	Soft check output (open)

• IC1001 M30805MG-205GP SYSTEM CONTROL (DIGITAL BOARD)

Pin No.	Pin Name	I/O	Description
1	—	—	Not used
2	—	—	Not used
3	LVLI	—	Not used
4	LVL0	—	Not used
5	(TXD3)	—	Not used
6	(RXD3)	—	Not used
7	(CLK3)	—	Not used
8	MUTE	O	Line out muting output L: Muting
9	DARST	O	Reset signal output to the D/A converter L: Active
10	SLICERSEL	O	IEC958 input select signal output to the D/A converter L: CD H: MD
11	LD-LOW	O	Loading motor voltage control output L: High voltage H: Low voltage
12	LDIN	I	Loading motor control input H: IN
13	LDOUT	O	Loading motor control output H: OUT
14	MOD	O	Laser modulation switching signal output L: OFF H: ON
15	BYTE	I	Data bus changed input (Connected to ground)
16	CNVSS	—	Ground
17	X-CIN	O	Sub clock input (32.768kHz) (Not used)
18	X-COUT	O	Sub clock output (32.768kHz) (Not used)
19	RESET	I	System rest input L : ON
20	XOUT	O	Main clock output (10MHz)
21	VSS0	—	Ground
22	XIN	I	Main clock input (10MHz)
23	VCC0	—	Power supply (+3.3V)
24	NMI	I	Fixed at H (Pull-up)
25	DQSY	I	Digital in sync input (Record system)
26	P.DOWN	I	Power down detection input L: Power down
27	SQSY	I	ADIP (MO) sync or subcode Q (PIT) sync input from CXD2662R (Playback system)
28	NC	—	Not used
29	LDON	O	Laser ON/OFF control output H: Laser ON
30	LIMIT-IN	I	Detection input from the limit switch L: Sled limit-In H: Sled limit-Out
31	C2-PWM-B	—	Not used
32	XINIT	I	Interrupt status input from CXD2662R
33	—	—	Not used
34	XELT	I	XELT input from DSP IC
35	WR PWR	O	Write power ON/OFF output L: OFF H: ON
36	IIC CLK	I/O	IIC serial clock input/output
37	IIC DATA	I/O	IIC serial data input/output
38	SWDT	O	Writing data signal output to the serial bus
39	VCC1	—	Power supply (+3.3V)
40	SRDT	I	Reading data signal input from the serial bus
41	VSS1	—	Ground
42	SCLK	O	Clock signal output to the serial bus
43	REC-SW	I	Detection signal input from the recording position detection switch L: REC
44	CLIP DTO	O	CLIP serial data output
45	CLIPDTI	I	CLIP serial data input
46	CLIP CLK	O	CLIP serial clock output (Not used)
47	DIG-RST	O	Digital rest signal output to the CXD2662R and motor driver L: Reset
48	SENS	I	Internal status (SENSE) input from the CXD2662R
49	PLAY-SW	I	Detection signal input from the playback position detection switch L: PLAY
50	XLAT	O	Latch signal output to DSP IC
51	OUT-SW	I	Detection signal input from the loading out detection switch

Pin No.	Pin Name	I/O	Description
52	—	—	Not used
53	—	—	Not used
54	—	—	Not used
55	—	O	Not used
56	MNT2 (XBUSY)	I	In the state of executive command from the CXD2662R
57	VSS2	—	Ground
58	MNT1 (SHCK)	I	Track jump signal input from the CXD2662R
59	VCC2	—	Power supply (+3.3V)
60	EEP-WP	O	EEP-ROM write protect signal output L: write possibility
61	SDA (EEP)	I/O	Data signal input/output pin with the EEP-ROM
62	BCLK/ALE/CLKO	—	Not used
63	RD/DW	O	Read signal output (Not used)
64	BHE/CASH	—	Not used
65	WR/CASL	O	Write signal output
66	SCL	O	Clock signal output to the EEP-ROM
67	REFLECT	I	Disk reflection rate detection input from the reflect detection switch H: Disk with low reflection rate
68	PROTECT	I	Recording-protection claw detection input from the protection detection switch H: Protect
69	CS0	O	Chip select signal output to the Flash ROM
70	CS1	O	Not used
71	—	O	Not used
72	A20	O	Address bus signal output to Flash ROM
73	A19	O	Address bus signal output to Flash ROM (Not used)
74	VCC3	—	Power supply (+3.3V)
75	A18	O	Address bus signal output to Flash ROM (Not used)
76	VSS3	—	Ground
77 to 85	A17 to A9	O	Address bus signal output to Flash ROM
86 to 89	SEL 3 to 0	O	Not used
90	WP	O	Write protect signal to the Flash ROM
91	VCC4	—	Power supply (+3.3V)
92	A8	O	Address bus signal output to Flash ROM (Not used)
93	VSS4	—	Ground
94 to 100	A7 to A1	O	Address bus signal output to Flash ROM (Not used)
101	LB	—	Not used
102 to 113	D15 to D4	I/O	Data bus signal input/output to the Flash ROM (Not used)
114	CLIP-SEL	O	Not used
115	IIC BUSY	O	IIC cable connect check L: Active
116	DALOCK	O	LOCK signal input from D/A converter
117	LINE-MUTE	O	Not used
118	ADP DOWN	O	Reset signal output to the A/D converter
119 to 122	D3 to D0	I/O	Data bus signal input/output to the Flash ROM (Not used)
123	SPDIF-CUT	—	Jog dial pulse input from the rotary encoder
124	OPT SEL	O	Optical select signal output
125 to 129	—	—	Not used
130	VSS5	—	Ground
131	—	O	Not used
132	VCC5	—	Power supply (+3.3V)
133	OP-LEVEL	I	Optical Pick-up voltage (current) detect signal input
134 to 139	—	—	Not used
140	AVSS	—	Ground (Analog)
141	—	—	Not used
142	VREF	—	Power supply (+3.3V)
143	AVCC	—	Power supply (+3.3V)
144	NC	I	Not used

SECTION 8
EXPLODED VIEWS

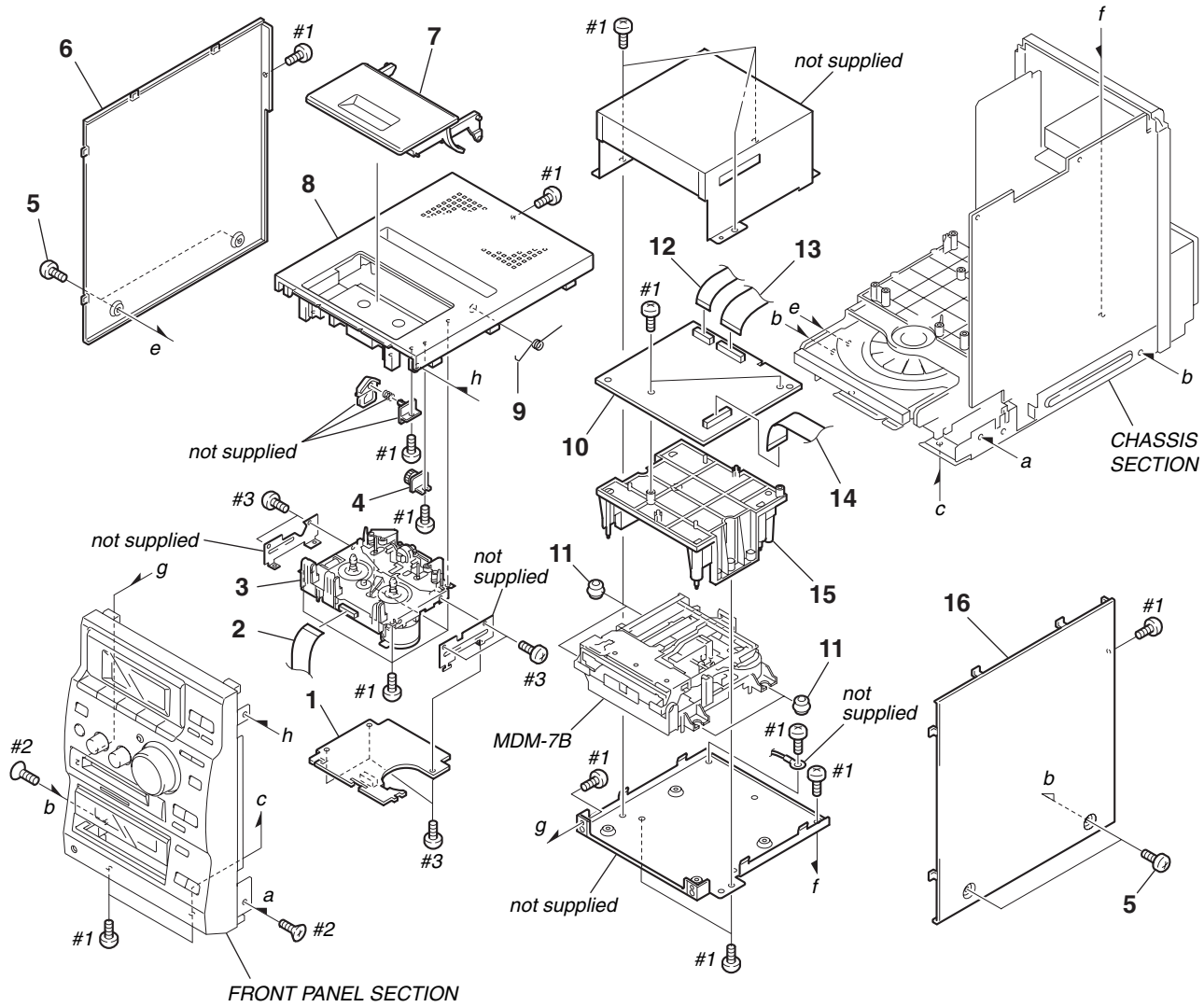
NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

- Abbreviation
  AUS : Australian model
  CH : Chinese model
  E51 : Chilean and Peruvian model
  HK : Hong Kong model
  TH : Thai model
  TW : Taiwan model

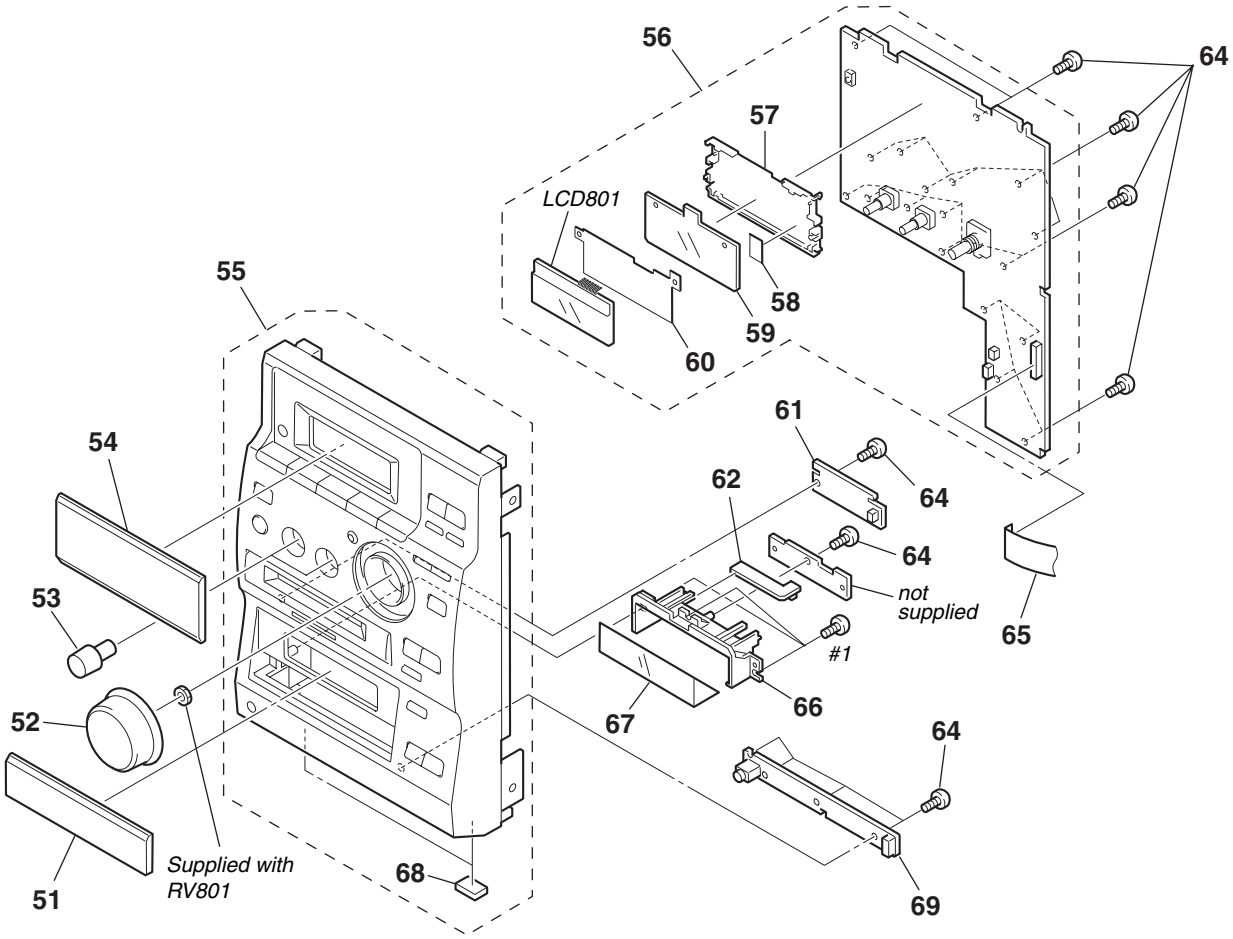
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

8-1. CASE AND TAPE MECHANISM DECK SECTION



Ref. No.	Part No.	Description	Remarks
1	A-4725-838-A	TC BOARD, COMPLETE	
2	1-757-943-11	WIRE (FLAT TYPE) (12CORE)	
3	1-796-101-11	DECK, MECH	
4	3-926-926-01	GEAR, DAMPER	
5	4-221-580-01	SCREW, CASE	
6	4-234-555-01	SIDE PANEL (L)	
7	X-4953-835-1	HOLDER ASSY, CASSETTE	
8	4-234-546-01	PANEL, TOP	
9	4-234-564-01	SPRING (CASSETTE OPEN)	
10	A-4725-834-A	DIGITAL BOARD, COMPLETE	
11	4-231-555-01	INSULATOR	
12	1-757-944-11	WIRE (FLAT TYPE)(17CORE)	
13	1-757-942-11	WIRE (FLAT TYPE)(27CORE)	
14	1-792-767-11	WIRE (FLAT TYPE) (25 CORE)	
15	4-234-554-01	COVER, MD	
16	4-234-556-01	SIDE PANEL (R)	

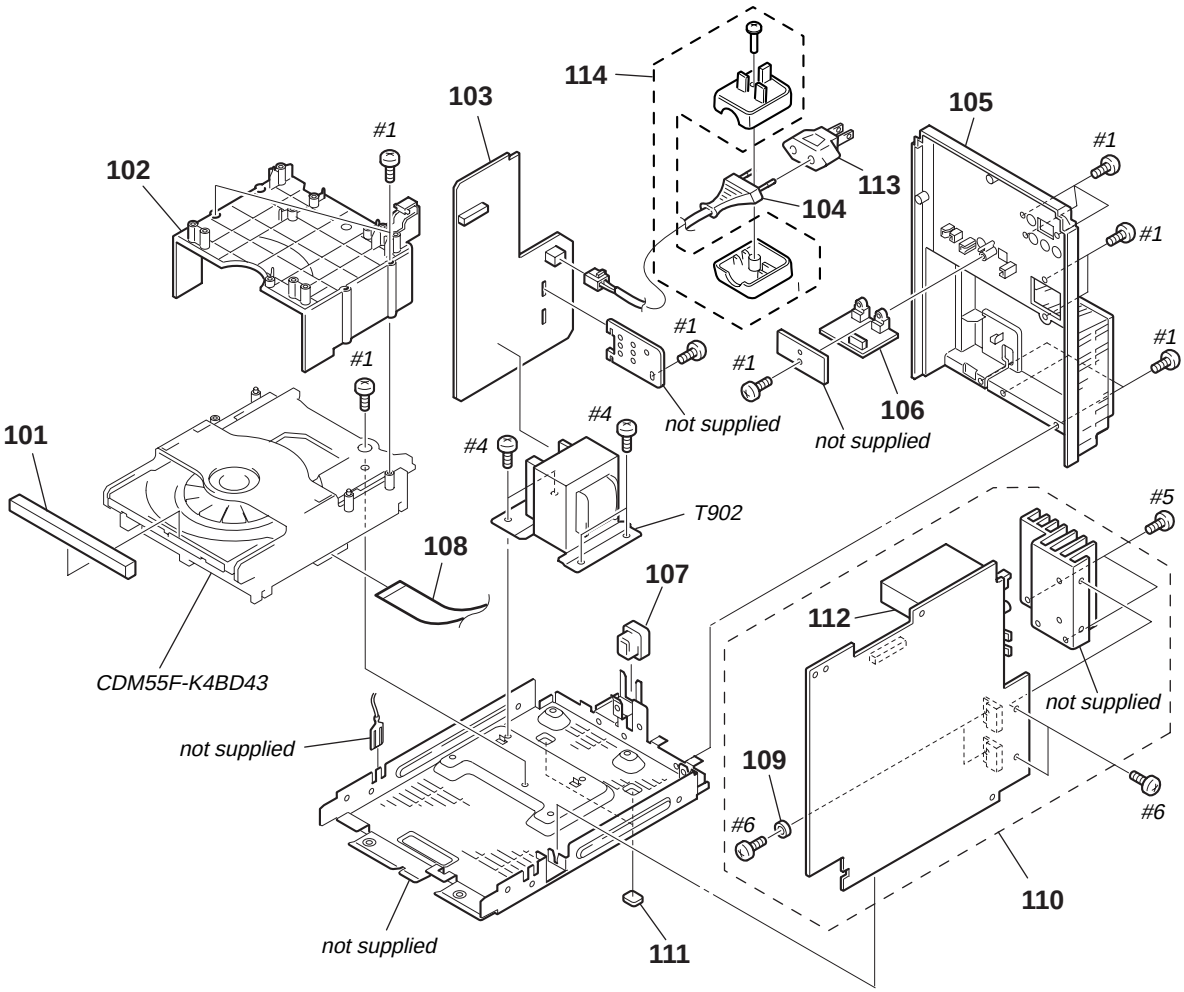
8-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remarks
51	4-232-471-01	WINDOW, CD	
52	4-232-441-01	KNOB (VOL)	
53	4-234-573-01	KNOB (TIBASS)	
54	4-234-562-01	WINDOW (LCD)	
55	X-4953-821-1	PANEL SUB ASSY, FRONT (CP500MD:AEP,UK)	
55	X-4953-822-1	PANEL SUB ASSY, FRONT (CP500MD:US,CND,AUS,E51,HK,TW,TH)	
55	X-4953-837-1	PANEL SUB ASSY, FRONT (CP500K)	
55	X-4953-964-1	PANEL SUB ASSY, FRONT (CP500MD:CH)	
56	A-2056-914-A	CONTROL BOARD, COMPLETE	
57	4-234-522-01	HOLDER (LCD)	
58	4-234-563-01	ADHESIVE (LCD WINDOW)	

Ref. No.	Part No.	Description	Remarks
59	4-217-319-21	PLATE, LCD LIGHT	
60	4-234-566-01	LCD SHIEET	
61	A-2056-914-A	MD-INDICATE BOARD, COMPLETE	
62	A-2056-914-A	CD-PRISM BOARD, COMPLETE	
64	7-685-134-19	SCREW (DIA.2.6X8) (IT3B), TAPPING	
65	1-757-946-11	WIRE (FLAT TYPE) (25 CORE)	
66	4-234-559-01	HOLDER (PRISM)	
67	4-232-451-01	PRISM	
68	4-232-478-01	FOOT	
69	A-2056-914-A	HEAD PHONE BOARD, COMPLETE	
LCD801	1-804-393-11	DISPLAY PANEL, LIQUID CRYSTAL	

8-3. CHASSIS SECTION

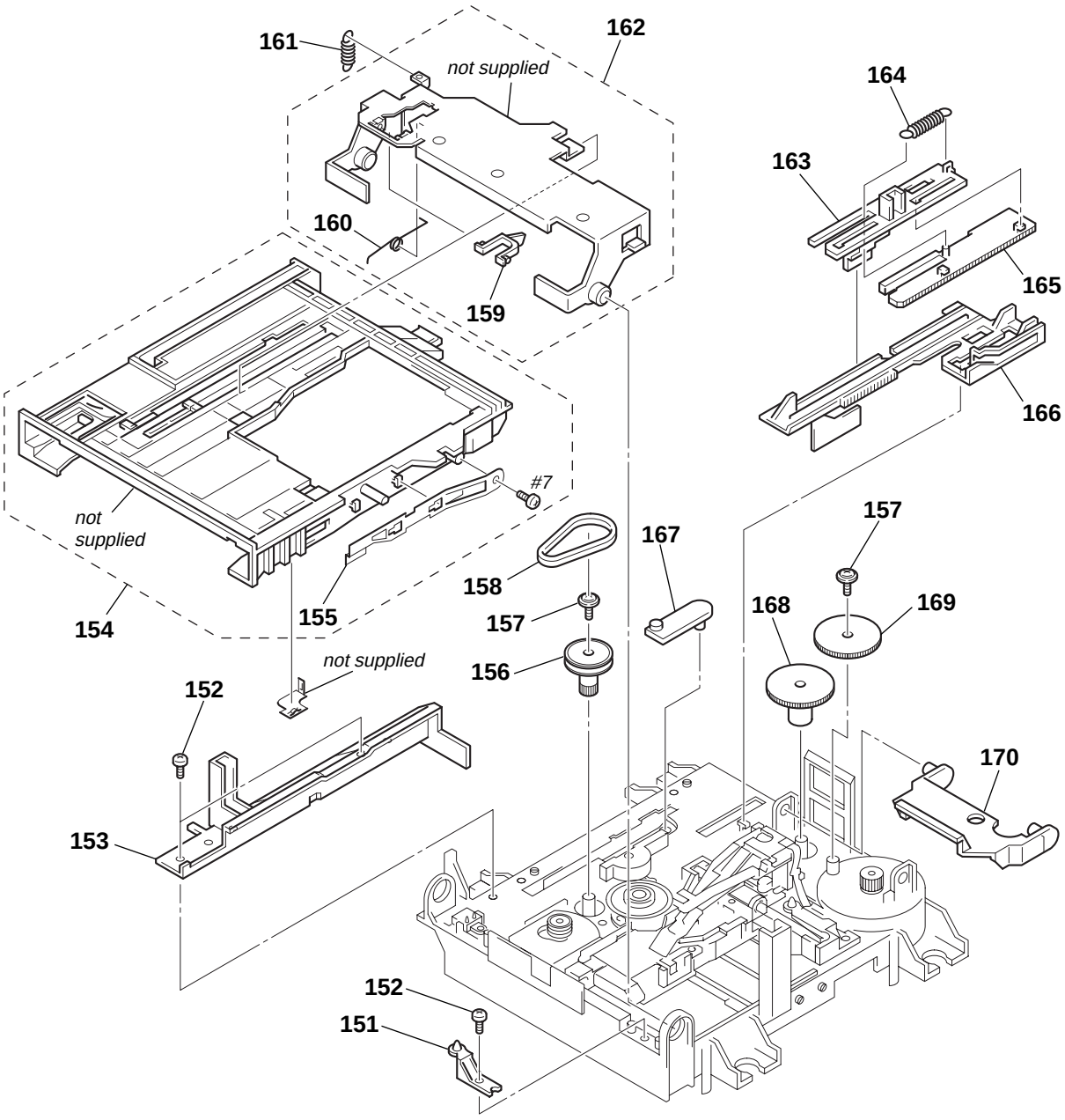


Ref. No.	Part No.	Description	Remarks
101	4-232-434-01	LID, CD	
102	4-234-551-01	BRACKET,MPEG	
103	A-4725-836-A	POWER BOARD, COMPLETE (CP500K/CP500MD:AEP,UK,AUS,CH,TH)	
103	A-4725-843-A	POWER BOARD, COMPLETE (CP500MD:US,CND)	
103	A-4725-850-A	POWER BOARD, COMPLETE (CP500MD:E51,HK,TW)	
⚠104	1-783-531-71	CORD, POWER (CP500MD:US,CND)	
⚠104	1-558-943-31	CORD, POWER (CP500MD:TH)	
⚠104	1-696-169-11	CORD, POWER (CP500MD:AEP,UK,E51,HK,TW)	
⚠104	1-696-848-41	CORD, POWER (CP500MD:AUS)	
⚠104	1-769-079-21	CORD, POWER (CP500K)	
⚠104	1-782-464-21	CORD, POWER (CP500MD:CH)	
105	4-234-568-01	PANEL, BACK (CP500MD:AEP,UK,AUS,CH)	
105	4-234-568-11	PANEL, BACK (CP500K/CP500MD:US,CND,TH)	
105	4-234-568-31	PANEL, BACK (CP500MD:TW)	
105	4-234-568-41	PANEL, BACK (CP500MD:E51,HK)	
106	A-2056-914-A	OPTICAL BOARED, COMPLETE	
107	4-217-350-11	STOPPER, CORD (CP500MD:US,CND,AEP,UK,AUS,CH,E51,HK,TW)	

Ref. No.	Part No.	Description	Remarks
108	1-757-943-11	WIRE (FLAT TYPE) (22CORE)	
109	4-217-354-11	BUSHING, INSULATING	
110	A-4725-837-A	MAIN BOARD, COMPLETE (CP500MD:AEP,UK)	
110	A-4725-844-A	MAIN BOARD, COMPLETE (CP500MD:US,CND)	
110	A-4725-849-A	MAIN BOARD, COMPLETE (CP500MD:AUS)	
110	A-4725-851-A	MAIN BOARD, COMPLETE (CP500MD:TW)	
110	A-4725-852-A	MAIN BOARD, COMPLETE (CP500MD:TH)	
110	A-4726-237-A	MAIN BOARD, COMPLETE (CP500MD:CH)	
110	A-4726-248-A	MAIN BOARD, COMPLETE (CP500MD:E51,HK)	
110	A-4726-784-A	MAIN BOARD, COMPLETE (CP500K)	
111	4-232-478-01	FOOT	
112	A-4303-624-A	TUNER UNIT (CP500K/CP500MD:AEP,UK,TW,AUS,CH)	
112	A-4303-625-A	TUNER UNIT (CP500MD:US,CND)	
112	A-4303-626-A	TUNER UNIT (CP500MD:E51,HK,TH)	
⚠113	1-569-008-21	ADPTOR, CONVERSION 2P (CP500MD:TW)	
⚠114	1-770-019-11	ADPTOR, CONVERSION PLUG 3P (CP500MD:UK,HK)	
⚠T902	1-437-248-21	TRANSFORMER, POWER (EXCEPT CP500MD:US,CND)	
⚠T902	1-437-249-21	TRANSFORMER, POWER(CP500MD:US,CND)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.	以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

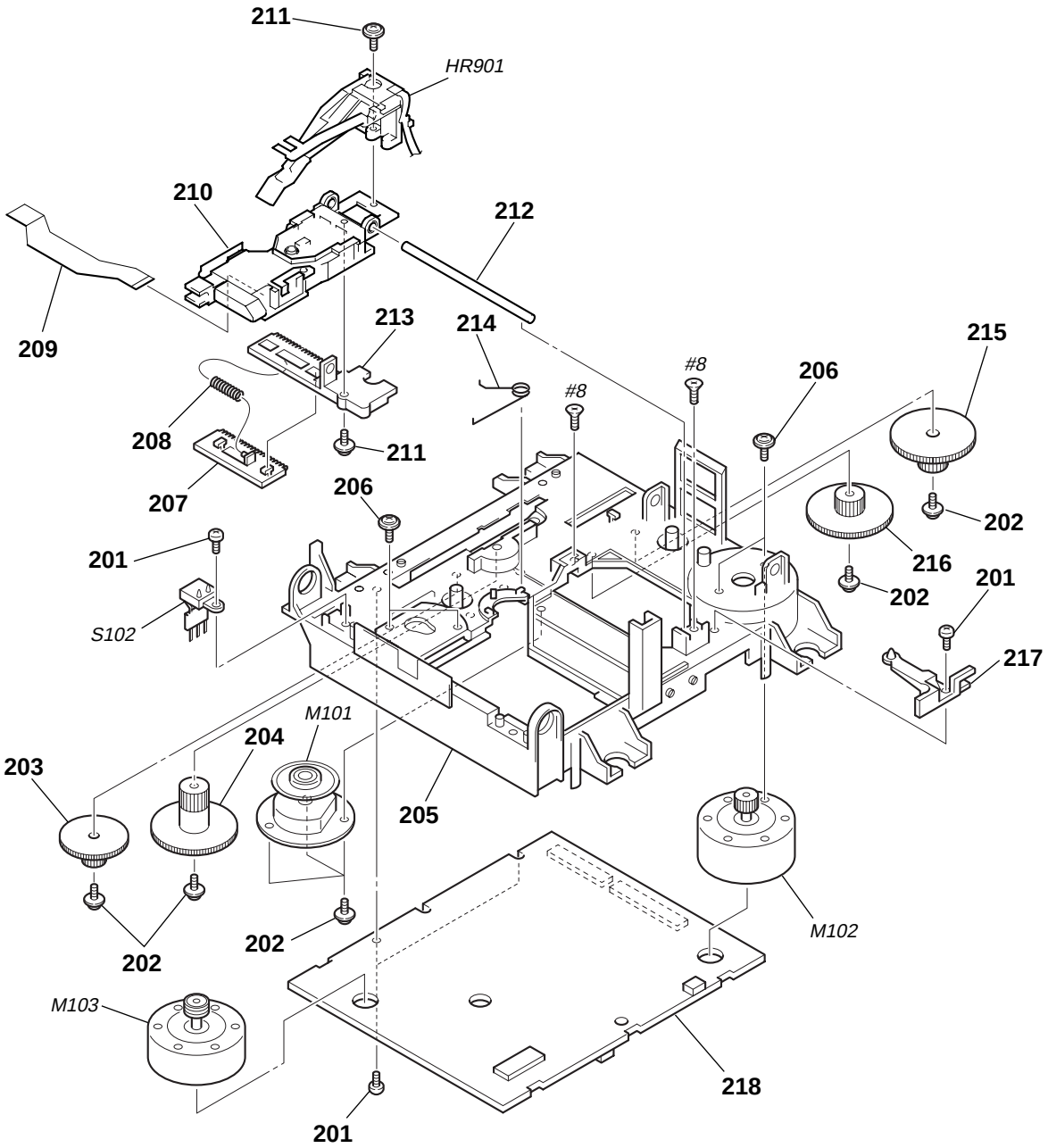
8-4. MD MECHANISM DECK SECTION-1 (MDM-7B)



Ref. No.	Part No.	Description	Remarks
* 151	4-996-267-01	BASE (BU-D)	
152	4-231-319-01	SCREW (+BTP) (2X6)	
153	4-226-994-01	GUIDE (L)	
154	A-4735-075-A	HOLDER ASSY	
155	X-4952-665-1	SPRING (SHT) ASSY, LEAF	
156	4-227-002-01	GEAR, PULEY	
157	3-372-761-01	SCREW (M1.7), TAPPING	
158	4-227-025-01	BELT (LOADING)	
159	4-228-923-01	LOCK (HOLDER)	
160	4-229-533-01	SPRING (STOPRER), TORSION	

Ref. No.	Part No.	Description	Remarks
161	4-227-012-01	SPRING (HOLDER), TENSION	
162	A-4680-638-B	PLATE (HOLDER) ASSY, RETAINER	
163	4-226-996-01	LIMITTER (EJ)	
164	4-227-013-01	SPRING (EJ), TENSION	
165	4-226-995-01	SLIDER (EJ)	
166	4-226-997-04	SLIDER	
167	4-226-998-01	LEVER (CHG)	
168	4-227-007-01	GEAR (SB)	
169	4-227-006-01	GEAR (SA)	
170	4-226-999-01	LEVER (HEAD)	

8-5. MD MECHANISM DECK SECTION-2 (MDM-7B)

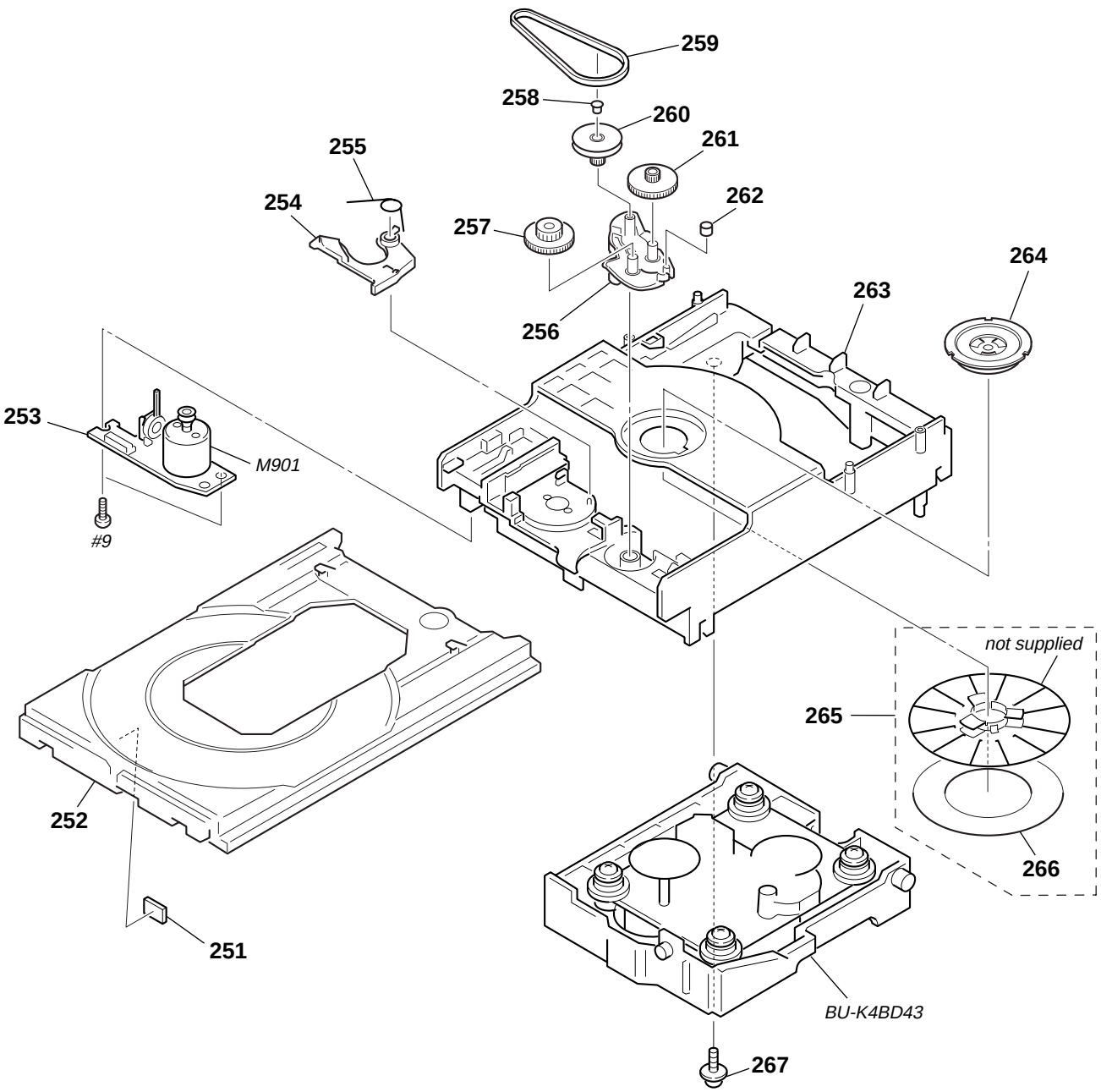


Ref. No.	Part No.	Description	Remarks
201	4-231-319-01	SCREW (+BTP) (2X6)	
202	3-372-761-01	SCREW (M1.7), TAPPING	
203	4-227-008-01	GEAR (SC)	
204	4-227-009-01	GEAR (SD)	
205	4-226-989-01	CHASSIS	
206	4-232-270-01	SCREW (1.7X2.5), +PWH	
207	4-226-993-01	RACK	
208	4-227-014-01	SPRING (RACK), COMPRESSION	
209	1-678-514-11	FLEXIBLE BOARD	
⚠210	A-4672-541-A	OPTICAL PICK-UP KMS-260B	
211	4-988-560-01	SCREW (+P 1.7X6)	
212	4-996-265-01	SHAFT, MAIN	

Ref. No.	Part No.	Description	Remarks
213	4-226-992-01	BASE, SL	
214	4-227-023-01	SPRING (SPINDLE), TORSION	
215	4-227-004-01	GEAR (LC)	
216	4-227-005-01	GEAR (LD)	
217	4-226-990-01	BASE (BU-A)	
218	A-4725-473-A	BD BOARD, COMPLETE	
HR901	1-500-670-11	HEAD, OVER WRITE	
M101	A-4672-898-A	MOTOR ASSY, SPINDLE	
M102	A-4735-076-A	MOTOR ASSY, SLED	
M103	A-4735-074-A	MOTOR ASSY, LOADING(MD)	
S102	1-771-957-11	SWITCH, PUSH (2KEY) (REFLECT/PROTECT)	

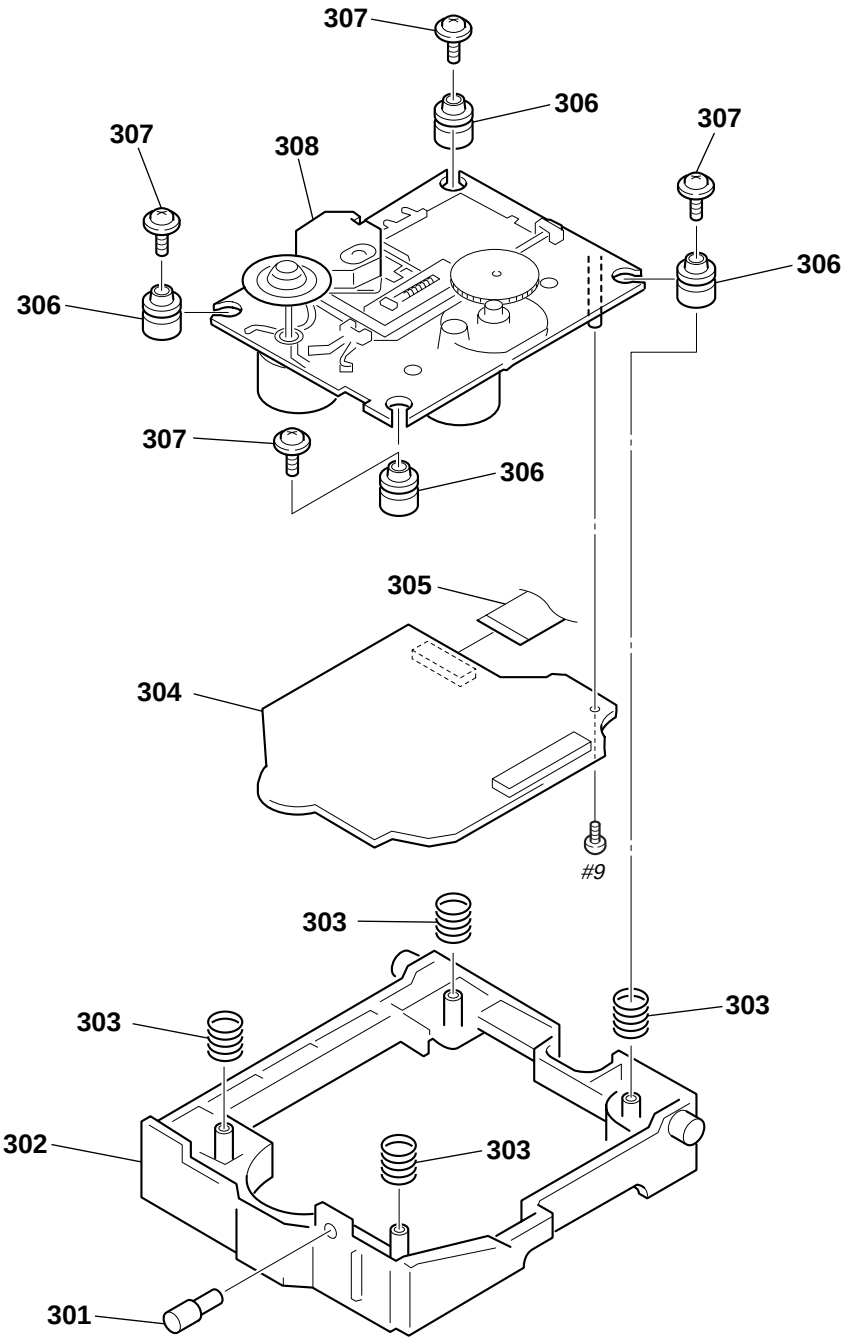
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.	以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

8-6. CD MECHANISM DECK SECTION-1 (CDM55F-K4BD43)



Ref. No.	Part No.	Description	Remarks
251	4-925-315-31	DAMPER	
252	4-224-894-01	TRAY	
253	1-676-599-11	LOADING BOARD	
254	4-220-229-01	LEVER (SW)	
255	4-220-239-01	SPRING,TORSION	
256	4-220-233-01	CAM (CDM55)	
257	4-220-238-01	GEAR (B)	
258	4-227-598-01	SPACER (55)	
259	4-221-816-01	BELT (CDM55)	
260	4-220-234-01	PULEY (LDG)	
261	4-220-237-01	GEAR (A)	
262	4-221-815-01	ROLLER	
263	4-231-779-01	CHASSIS (F)	
264	A-4735-082-A	MAGNET ASSY	
265	A-4735-081-A	PULLEY (AT-55F) ASSY	
266	4-232-398-01	SHEET (KH)	
267	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
M901	A-2004-893-A	MOTOR (LD) ASSY	

8-7. CD MECHANISM DECK SECTION-2 (BU-K4BD43)



Ref. No.	Part No.	Description	Remarks
301	4-221-817-02	SHAFT (BU)	
302	4-231-780-01	HOLDER (BU)	
303	4-229-004-01	SPRING (213), COMPRESSION	
304	A-4476-973-A	CD BOARD, COMPLETE	
305	1-757-055-11	WIRE (FLAT TYPE) (16 CORE)	
306	4-229-005-01	INSULATOR (213)	
307	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
⚠308	A-4735-357-A	BASE ASSY, OP (KSM-213DHAP/Z-NP)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.	以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

BD

SECTION 9
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...
- Abbreviation
  AUS : Australian model.
  CH : Chinese model.
  E51 : Chilean and Peruvian model.
  HK : Hong Kong model.
  TH : Thai model.
  TW : Taiwan model.

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

Ref. No.	Part No.	Description			Remarks
	A-4725-473-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-135-259-11	TANTAL. CHIP	10uF	20.00%	6.3V
C102	1-135-259-11	TANTAL. CHIP	10uF	20.00%	6.3V
C103	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C104	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C105	1-115-416-11	CERAMIC CHIP	0.001uF	5.00%	25V
C106	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C107	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C108	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C109	1-164-677-11	CERAMIC CHIP	0.033uF	10.00%	16V
C110	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C111	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C112	1-110-563-11	CERAMIC CHIP	0.068uF	10.00%	16V
C113	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C114	1-125-837-00	CERAMIC CHIP	1uF	10%	6.3V
C115	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C116	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C117	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C118	1-165-176-11	CERAMIC CHIP	0.047uF	10.00%	16V
C119	1-165-176-11	CERAMIC CHIP	0.047uF	10.00%	16V
C120	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C121	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C125	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C128	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C131	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C132	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C133	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C141	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C142	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C143	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C144	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C145	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C146	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C147	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C151	1-117-370-11	CERAMIC CHIP	10uF		10V
C152	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C153	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C154	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C155	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C156	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C157	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C158	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C159	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C160	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C161	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C162	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C163	1-125-891-11	CERAMIC CHIP	0.47uF	10.00%	10V
C164	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C165	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C166	1-125-891-11	CERAMIC CHIP	0.47uF	10.00%	10V
C167	1-164-245-11	CERAMIC CHIP	0.015uF	10.00%	25V
C169	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C173	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C174	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C180	1-117-370-11	CERAMIC CHIP	10uF		10V
C181	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C182	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C183	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C184	1-117-970-11	ELECT CHIP	22uF	20.00%	10V
C185	1-131-872-11	CERAMIC CHIP	1000PF	10%	630V
C191	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C192	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C193	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C194	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C195	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C196	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1401	1-117-720-11	CERAMIC CHIP	4.7uF		10V
		< CONNECTOR >			
CN101	1-766-833-21	CONNECTOR, FFC/FPC (ZIF) 21P			
CN102	1-784-835-21	CONNECTOR,FFC(LIF(NON-ZIF))27P			
CN103	1-784-869-21	CONNECTOR,FFC(LIF(NON-ZIF))17P			
* CN104	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
CN105	1-784-859-21	CONNECTOR, FFC(LIF(NON-ZIF))7P			
		< DIODE >			
D101	8-719-988-61	DIODE 1SS355TE-17			
D181	8-719-080-81	DIODE FS1J6			
D183	8-719-080-81	DIODE FS1J6			
		< IC >			
IC101	8-752-080-95	IC CXA2523AR			
IC102	8-759-473-51	IC TLV2361CDBV			
IC141	8-759-836-79	IC BH6519FS-E2			
IC151	8-752-404-64	IC CXD2662R			
IC152	6-700-052-01	IC MSM51V17400F-50TS-K			

Ref. No.	Part No.	Description			Remarks
IC181	8-759-481-17	IC MC74ACT08DTR2			
IC190	8-759-677-64	IC L88M35T			
IC195	8-759-640-41	IC BR24C08F-E2			
		< CONDUCTOR >			
JW201	1-216-295-00	SHORT	0		
JW202	1-216-295-00	SHORT	0		
JW203	1-216-295-00	SHORT	0		
JW903	1-216-295-00	SHORT	0		
JW904	1-216-295-00	SHORT	0		
		< FERRTE BEAD/CONDUCTOR >			
L101	1-500-245-11	FERRITE	0uH		
L102	1-500-245-11	FERRITE	0uH		
L103	1-500-245-11	FERRITE	0uH		
L105	1-414-235-11	FERRITE	0uH		
L106	1-500-245-11	FERRITE	0uH		
L121	1-500-245-11	FERRITE	0uH		
L122	1-500-245-11	FERRITE	0uH		
L131	1-500-245-11	FERRITE	0uH		
L141	1-216-296-11	SHORT	0		
L142	1-216-296-11	SHORT	0		
L143	1-216-296-11	SHORT	0		
L144	1-216-296-11	SHORT	0		
L145	1-216-296-11	SHORT	0		
L146	1-469-855-21	FERRITE	0uH		
L147	1-469-855-21	FERRITE	0uH		
L161	1-500-245-11	FERRITE	0uH		
L171	1-500-245-11	FERRITE	0uH		
L180	1-469-855-21	FERRITE	0uH		
L181	1-469-855-21	FERRITE	0uH		
L182	1-500-245-11	FERRITE	0uH		
L183	1-216-296-11	SHORT	0		
L184	1-216-296-11	SHORT	0		
		< TRANSISTOR >			
Q101	8-729-403-35	TRANSISTOR	UN5113-TX		
Q121	8-729-403-35	TRANSISTOR	UN5113-TX		
Q122	8-729-101-07	TRANSISTOR	2SB798-T1DK		
Q131	8-729-026-53	TRANSISTOR	2SA1576A-T106-QR		
Q132	8-729-903-10	TRANSISTOR	FMW1-T-148		
Q133	8-729-402-93	TRANSISTOR	UN5214-TX		
Q134	8-729-402-93	TRANSISTOR	UN5214-TX		
Q181	8-729-018-75	TRANSISTOR	2SJ278MYTR		
Q182	8-729-017-65	TRANSISTOR	2SK1764KYTR		
		< RESISTOR >			
R101	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R102	1-216-853-11	METAL CHIP	470K	5%	1/16W
R103	1-216-863-11	RES-CHIP	3.3M	5%	1/16W
R104	1-216-853-11	METAL CHIP	470K	5%	1/16W
R105	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R106	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R107	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R108	1-216-833-11	METAL CHIP	10K	5%	1/16W
R109	1-216-845-11	METAL CHIP	100K	5%	1/16W
R110	1-216-845-11	METAL CHIP	100K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R111	1-216-833-11	METAL CHIP	10K	5%	1/16W
R112	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R113	1-216-833-11	METAL CHIP	10K	5%	1/16W
R114	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R115	1-216-833-11	METAL CHIP	10K	5%	1/16W
R116	1-216-839-11	METAL CHIP	33K	5%	1/16W
R117	1-216-837-11	METAL CHIP	22K	5%	1/16W
R118	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W
R119	1-218-863-11	METAL CHIP	4.7K	0.5%	1/16W
R120	1-218-889-11	METAL CHIP	56K	0.5%	1/16W
R121	1-218-863-11	METAL CHIP	4.7K	0.5%	1/16W
R122	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W
R123	1-216-819-11	METAL CHIP	680	5%	1/16W
R124	1-216-809-11	METAL CHIP	100	5%	1/16W
R125	1-216-815-11	METAL CHIP	330	5%	1/16W
R126	1-216-819-11	METAL CHIP	680	5%	1/16W
R127	1-216-845-11	METAL CHIP	100K	5%	1/16W
R128	1-219-724-11	METAL CHIP	1	1%	1/4W
R129	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R130	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R131	1-216-833-11	METAL CHIP	10K	5%	1/16W
R132	1-216-839-11	METAL CHIP	33K	5%	1/16W
R133	1-216-821-11	METAL CHIP	1K	5%	1/16W
R134	1-216-821-11	METAL CHIP	1K	5%	1/16W
R135	1-216-821-11	METAL CHIP	1K	5%	1/16W
R136	1-216-302-00	METAL CHIP	2.7	5%	1/10W
R138	1-216-833-11	METAL CHIP	10K	5%	1/16W
R150	1-216-833-11	METAL CHIP	10K	5%	1/16W
R151	1-216-833-11	METAL CHIP	10K	5%	1/16W
R153	1-216-833-11	METAL CHIP	10K	5%	1/16W
R155	1-216-864-11	METAL CHIP	0	5%	1/16W
R156	1-216-864-11	METAL CHIP	0	5%	1/16W
R158	1-216-809-11	METAL CHIP	100	5%	1/16W
R162	1-216-833-11	METAL CHIP	10K	5%	1/16W
R167	1-216-833-11	METAL CHIP	10K	5%	1/16W
R168	1-216-845-11	METAL CHIP	100K	5%	1/16W
R169	1-216-855-11	METAL CHIP	680K	5%	1/16W
R170	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R171	1-216-821-11	METAL CHIP	1K	5%	1/16W
R173	1-216-821-11	METAL CHIP	1K	5%	1/16W
R174	1-216-811-11	METAL CHIP	150	5%	1/16W
R177	1-216-805-11	METAL CHIP	47	5%	1/16W
R179	1-216-295-00	SHORT	0		
R181	1-216-841-11	METAL CHIP	47K	5%	1/16W
R182	1-216-841-11	METAL CHIP	47K	5%	1/16W
R183	1-216-841-11	METAL CHIP	47K	5%	1/16W
R184	1-220-942-11	METAL CHIP	3.3	1%	1/4W
R185	1-220-942-11	METAL CHIP	3.3	1%	1/4W
R195	1-216-833-11	METAL CHIP	10K	5%	1/16W
R196	1-216-833-11	METAL CHIP	10K	5%	1/16W
R197	1-216-833-11	METAL CHIP	10K	5%	1/16W
R218	1-216-864-11	METAL CHIP	0	5%	1/16W
		< SWITCH >			
S101	1-762-596-21	SWITCH, PUSH (1 KEY) (LIMIT IN)			
S103	1-771-956-21	SWITCH, PUSH (1 KEY) (OUT)			
S104	1-771-955-21	SWITCH, PUSH (1 KEY) (PLAY)			
S105	1-771-955-21	SWITCH, PUSH (1 KEY) (REC)			

BD **CD**

Ref. No.	Part No.	Description			Remarks
		< VIBRATOR >			
X171	1-781-569-21	OSCILLATOR, CRYSTAL (90MHz)			
**********					
	A-4476-973-A	CD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C102	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C103	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C104	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C107	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C108	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C109	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C110	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C111	1-126-204-11	ELECT CHIP	47uF	20%	16V
C112	1-126-204-11	ELECT CHIP	47uF	20%	16V
C113	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C114	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C115	1-126-204-11	ELECT CHIP	47uF	20%	16V
C117	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C118	1-115-156-11	CERAMIC CHIP	1uF		10V
C119	1-115-156-11	CERAMIC CHIP	1uF		10V
C120	1-126-204-11	ELECT CHIP	47uF	20%	16V
C151	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C162	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C201	1-126-204-11	ELECT CHIP	47uF	20%	16V
C202	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C203	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C204	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C205	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C209	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C211	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C212	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C213	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C215	1-117-863-11	CERAMIC CHIP	0.47uF	10.00%	6.3V
C216	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C217	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C221	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C222	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C224	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C227	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C228	1-115-156-11	CERAMIC CHIP	1uF		10V
C229	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C230	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C231	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C234	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C235	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C236	1-117-863-11	CERAMIC CHIP	0.47uF	10.00%	6.3V
C237	1-115-412-11	CERAMIC CHIP	680PF	5.00%	25V
C238	1-115-412-11	CERAMIC CHIP	680PF	5.00%	25V
C239	1-115-412-11	CERAMIC CHIP	680PF	5.00%	25V
C240	1-115-412-11	CERAMIC CHIP	680PF	5.00%	25V
C241	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C242	1-126-204-11	ELECT CHIP	47uF	20%	16V
C243	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C244	1-164-360-11	CERAMIC CHIP	0.1uF		16V

Ref. No.	Part No.	Description			Remarks
C245	1-126-204-11	ELECT CHIP	47uF	20%	16V
C247	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C248	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C249	1-164-360-11	CERAMIC CHIP	0.1uF		16V
		< CONNECTOR >			
CN101	1-784-873-21	CONNECTOR,FFC(LIF(NON-ZIF))22P			
CN102	1-794-424-11	CONNECTOR, FCC/FPC 16P			
		< DIODE >			
D101	8-719-056-77	DIODE UDZ-TE-17-3.9B			
		< FERRITE BEAD >			
FB101	1-500-445-21	FERRITE	0UH		
		< IC >			
IC101	8-752-408-73	IC CXD3068Q			
IC103	8-752-089-73	IC CXA2581N			
IC702	8-759-640-22	IC BA5982FM			
		< COIL >			
L107	1-500-445-21	FERRITE	0uH		
		< TRANSISTOR >			
Q101	8-729-049-31	TRANSISTOR	2SB710A-RTX		
Q102	8-759-068-54	TRANSISTOR	KRA102S		
Q103	8-729-920-85	TRANSISTOR	2SD1664-T100-QR		
		< RESISTOR >			
R102	1-216-835-11	METAL CHIP	15K	5%	1/16W
R103	1-216-845-11	METAL CHIP	100K	5%	1/16W
R104	1-216-835-11	METAL CHIP	15K	5%	1/16W
R105	1-216-821-11	METAL CHIP	1K	5%	1/16W
R109	1-216-846-11	METAL CHIP	120K	5%	1/16W
R111	1-216-846-11	METAL CHIP	120K	5%	1/16W
R113	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R114	1-218-745-11	RES-CHIP	160K	5%	1/16W
R115	1-216-839-11	METAL CHIP	33K	5%	1/16W
R118	1-216-833-11	METAL CHIP	10K	5%	1/16W
R120	1-216-846-11	METAL CHIP	120K	5%	1/16W
R122	1-216-845-11	METAL CHIP	100K	5%	1/16W
R123	1-216-797-11	METAL CHIP	10	5%	1/16W
R124	1-216-798-11	RES-CHIP	12	5%	1/16W
R125	1-216-839-11	METAL CHIP	33K	5%	1/16W
R126	1-216-839-11	METAL CHIP	33K	5%	1/16W
R151	1-216-845-11	METAL CHIP	100K	5%	1/16W
R152	1-216-833-11	METAL CHIP	10K	5%	1/16W
R201	1-216-839-11	METAL CHIP	33K	5%	1/16W
R202	1-216-833-11	METAL CHIP	10K	5%	1/16W
R203	1-216-845-11	METAL CHIP	100K	5%	1/16W
R204	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R205	1-216-821-11	METAL CHIP	1K	5%	1/16W
R206	1-216-833-11	METAL CHIP	10K	5%	1/16W
R207	1-216-857-11	METAL CHIP	1M	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R212	1-216-813-11	METAL CHIP	220	5%	1/16W
R213	1-216-864-11	METAL CHIP	0	5%	1/16W
R214	1-216-864-11	METAL CHIP	0	5%	1/16W
R215	1-216-864-11	METAL CHIP	0	5%	1/16W
R216	1-216-813-11	METAL CHIP	220	5%	1/16W
R217	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R218	1-216-821-11	METAL CHIP	1K	5%	1/16W
R219	1-216-821-11	METAL CHIP	1K	5%	1/16W
R221	1-216-813-11	METAL CHIP	220	5%	1/16W
R226	1-216-809-11	METAL CHIP	100	5%	1/16W
R227	1-216-845-11	METAL CHIP	100K	5%	1/16W
R228	1-216-853-11	METAL CHIP	470K	5%	1/16W
R229	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R230	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R240	1-216-837-11	METAL CHIP	22K	5%	1/16W
R241	1-216-837-11	METAL CHIP	22K	5%	1/16W
R242	1-216-837-11	METAL CHIP	22K	5%	1/16W
R243	1-216-837-11	METAL CHIP	22K	5%	1/16W
R244	1-218-344-11	RES-CHIP	7.5K	5%	1/16W
R245	1-218-344-11	RES-CHIP	7.5K	5%	1/16W
R246	1-218-344-11	RES-CHIP	7.5K	5%	1/16W
R247	1-218-344-11	RES-CHIP	7.5K	5%	1/16W
R248	1-218-332-11	RES-CHIP	130K	5%	1/16W
R249	1-216-845-11	METAL CHIP	100K	5%	1/16W
R250	1-218-344-11	RES-CHIP	7.5K	5%	1/16W
R251	1-216-847-11	METAL CHIP	150K	5%	1/16W
R252	1-218-344-11	RES-CHIP	7.5K	5%	1/16W
R253	1-216-837-11	METAL CHIP	22K	5%	1/16W
R254	1-216-837-11	METAL CHIP	22K	5%	1/16W

< NETWORK >

RN201	1-233-576-11	RES, CHIP NETWORK 100	
RN202	1-233-576-11	RES, CHIP NETWORK 100	

< VARIABLE RESISTOR >

RV101	1-223-227-21	RES, CARBON ADJ VAR 47K	

< SWITCH >

S101	1-771-853-11	SWITCH, DETECTION (LIMIT IN)	

****

	A-2056-914-A	CD-PRISM BOARD, COMPLETE	
		**********	

< CONNECTOR >

* CN808	1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P	

< DIODE >

D811	8-719-084-70	DIODE	SY3318-V-S1-T (BACK LIGHT)
D812	8-719-084-70	DIODE	SY3318-V-S1-T (BACK LIGHT)

****

	A-2056-914-A	CONTROL BOARD, COMPLETE	
		**********	
	4-217-319-21	PLATE, LCD LIGHT	
	4-234-552-01	HOLDER (LCD)	
	4-234-566-01	LCD SHEET	
	4-235-892-01	SHEET (LCD.HOLDER)	
	4-235-893-01	SHEET, LCD (S)	

Ref. No.	Part No.	Description			Remarks

< CAPACITOR >

C841	1-124-259-11	ELECT	4.7uF	20.00%	16V
C842	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C843	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C844	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

< CONNECTOR >

CN801	1-794-470-11	CONNECTOR, FFC/FPC 25P	

< DIODE >

D801	8-719-085-55	DIODE	SY3318-V-L (BACK LIGHT)
D802	8-719-085-55	DIODE	SY3318-V-L (BACK LIGHT)
D803	8-719-085-55	DIODE	SY3318-V-L (BACK LIGHT)
D804	8-719-085-55	DIODE	SY3318-V-L (BACK LIGHT)
D810	8-719-084-70	DIODE	SY3318-V-S1-T (BACK LIGHT)
D821	8-719-074-42	DIODE	SLR325VR-T31 (STAND BY)
D822	8-719-084-70	DIODE	SY3318-V-S1-T (BACK LIGHT)
D823	8-719-084-70	DIODE	SY3318-V-S1-T (BACK LIGHT)
D824	8-719-084-70	DIODE	SY3318-V-S1-T (BACK LIGHT)
D825	8-719-084-70	DIODE	SY3318-V-S1-T (BACK LIGHT)
D826	8-719-084-70	DIODE	SY3318-V-S1-T (BACK LIGHT)
D827	8-719-084-70	DIODE	SY3318-V-S1-T (BACK LIGHT)
D828	8-719-084-70	DIODE	SY3318-V-S1-T (BACK LIGHT)

< IC >

IC801	8-759-827-68	IC	NJL62H400A-1

< CONDUCTOR >

JR803	1-216-864-11	METAL CHIP	0	5%	1/16W
JR804	1-216-864-11	METAL CHIP	0	5%	1/16W
JR805	1-216-864-11	METAL CHIP	0	5%	1/16W
JR806	1-216-864-11	METAL CHIP	0	5%	1/16W
JR807	1-216-864-11	METAL CHIP	0	5%	1/16W
JR810	1-216-864-11	METAL CHIP	0	5%	1/16W

< LIQUID CRYSTAL DISPLAY >

LCD801	1-804-393-11	DISPLAY PANEL, LIQUID CRYSTAL	

< TRANSISTOR >

Q801	8-729-900-53	TRANSISTOR	DTC114EKA-T146
Q803	8-729-900-53	TRANSISTOR	DTC114EKA-T146
Q804	8-729-900-53	TRANSISTOR	DTC114EKA-T146
Q805	8-729-900-53	TRANSISTOR	DTC114EKA-T146
Q806	8-729-900-53	TRANSISTOR	DTC114EKA-T146
Q807	8-729-900-53	TRANSISTOR	DTC114EKA-T146
Q808	8-729-900-53	TRANSISTOR	DTC114EKA-T146
Q809	8-729-900-53	TRANSISTOR	DTC114EKA-T146

< RESISTOR >

R801	1-216-819-11	METAL CHIP	680	5%	1/16W
R802	1-216-820-11	METAL CHIP	820	5%	1/16W
R803	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R804	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R805	1-216-827-11	METAL CHIP	3.3K	5%	1/16W

CONTROL **DIGITAL**

Ref. No.	Part No.	Description			Remarks
R808	1-216-819-11	METAL CHIP	680	5%	1/16W
R809	1-216-820-11	METAL CHIP	820	5%	1/16W
R810	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R811	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R812	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R813	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R815	1-216-819-11	METAL CHIP	680	5%	1/16W
R816	1-216-820-11	METAL CHIP	820	5%	1/16W
R817	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R818	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R819	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R820	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R821	1-216-836-11	METAL CHIP	18K	5%	1/16W
R822	1-216-833-11	METAL CHIP	10K	5%	1/16W
R833	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R834	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R835	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R836	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R841	1-216-809-11	METAL CHIP	100	5%	1/16W
R842	1-216-845-11	METAL CHIP	100K	5%	1/16W
R843	1-216-845-11	METAL CHIP	100K	5%	1/16W
R845	1-216-817-11	METAL CHIP	470	5%	1/16W
R846	1-216-817-11	METAL CHIP	470	5%	1/16W
R847	1-216-819-11	METAL CHIP	680	5%	1/16W
R848	1-216-819-11	METAL CHIP	680	5%	1/16W
R861	1-216-845-11	METAL CHIP	100K	5%	1/16W
R862	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R863	1-216-819-11	METAL CHIP	680	5%	1/16W
R864	1-216-817-11	METAL CHIP	470	5%	1/16W
R865	1-216-817-11	METAL CHIP	470	5%	1/16W
R868	1-216-819-11	METAL CHIP	680	5%	1/16W
R869	1-216-819-11	METAL CHIP	680	5%	1/16W
R880	1-216-845-11	METAL CHIP	100K	5%	1/16W
R881	1-216-845-11	METAL CHIP	100K	5%	1/16W
R882	1-216-845-11	METAL CHIP	100K	5%	1/16W
R883	1-216-845-11	METAL CHIP	100K	5%	1/16W
R891	1-216-817-11	METAL CHIP	470	5%	1/16W
R892	1-216-817-11	METAL CHIP	470	5%	1/16W
R893	1-216-817-11	METAL CHIP	470	5%	1/16W
R894	1-216-817-11	METAL CHIP	470	5%	1/16W

< VARIABLE RESISTOR >

RV801	1-476-730-11	ENCODER, ROTARY (VOLUME)
RV802	1-418-859-11	ENCODER, ROTARY (TREBLE)
RV803	1-418-859-11	ENCODER, ROTARY (BASS)

< SWITCH >

S801	1-571-760-11	SWITCH, KEY BOARD (● (MD))
S802	1-571-760-11	SWITCH, KEY BOARD (▶II (MD))
S803	1-571-760-11	SWITCH, KEY BOARD (⏏ (MD))
S804	1-571-760-11	SWITCH, KEY BOARD (⏏ (CD))
S805	1-571-760-11	SWITCH, KEY BOARD (▶II (CD))
S806	1-571-760-11	SWITCH, KEY BOARD (■ (CD))
S809	1-571-760-11	SWITCH, KEY BOARD (DSG)
S810	1-571-760-11	SWITCH, KEY BOARD (ENTER/START)
S811	1-571-760-11	SWITCH, KEY BOARD (SYNCHRO)
S812	1-571-760-11	SWITCH, KEY BOARD (REC MODE)
S813	1-571-760-11	SWITCH, KEY BOARD (REPEAT)
S814	1-571-760-11	SWITCH, KEY BOARD (PLAY MODE/DIRECTION)
S815	1-571-760-11	SWITCH, KEY BOARD (FUNCTION)
S817	1-571-760-11	SWITCH, KEY BOARD (■ (MD))
S818	1-571-760-11	SWITCH, KEY BOARD (BAND)
S819	1-571-760-11	SWITCH, KEY BOARD (▶▶I)
S820	1-571-760-11	SWITCH, KEY BOARD (II (TAPE))
S821	1-571-760-11	SWITCH, KEY BOARD (■ (TAPE))
S822	1-571-760-11	SWITCH, KEY BOARD (◀▶ (TAPE))
S823	1-571-760-11	SWITCH, KEY BOARD (● (TAPE))
S824	1-571-760-11	SWITCH, KEY BOARD (I◀◀)
S825	1-571-760-11	SWITCH, KEY BOARD (I/⏻)

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A-4725-834-A DIGITAL BOARD, COMPLETE

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< CAPACITOR >

C1001	1-126-934-11	ELECT	220uF	20.00%	10V
C1002	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1003	1-126-933-11	ELECT	100uF	20.00%	16V
C1004	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1005	1-126-933-11	ELECT	100uF	20.00%	16V
C1006	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1007	1-126-933-11	ELECT	100uF	20.00%	16V
C1008	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1009	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1010	1-126-933-11	ELECT	100uF	20.00%	16V
C1011	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1012	1-126-933-11	ELECT	100uF	20.00%	16V
C1013	1-126-933-11	ELECT	100uF	20.00%	16V
C1014	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1015	1-126-933-11	ELECT	100uF	20.00%	16V
C1016	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1017	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1018	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1019	1-163-009-11	CERAMIC CHIP	0.001uF	10.00%	50V
C1020	1-163-009-11	CERAMIC CHIP	0.001uF	10.00%	50V
C1021	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1022	1-126-933-11	ELECT	100uF	20.00%	16V
C1023	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1024	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1025	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1026	1-126-933-11	ELECT	100uF	20.00%	16V
C1027	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C1034	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C1035	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1037	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C1038	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C1039	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1040	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1041	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1042	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C1043	1-162-918-11	CERAMIC CHIP	18PF	5.00%	50V
C1044	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1045	1-126-933-11	ELECT	100uF	20.00%	16V
C1046	1-136-153-00	FILM	0.01uF	5%	50V
C1047	1-136-153-00	FILM	0.01uF	5%	50V

Ref. No.	Part No.	Description			Remarks
C1048	1-126-933-11	ELECT	100uF	20.00%	16V
C1049	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1050	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1051	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1052	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1118	1-126-935-11	ELECT	470uF	20.00%	16V
C2003	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C2004	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C2005	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
CN1001	1-794-470-11	CONNECTOR, FFC/FPC 25P			
CN1003	1-779-295-11	CONNECTOR,FFC(LIF(NON-ZIF))27P			
CN1004	1-779-285-11	CONNECTOR,FFC(LIF(NON-ZIF))17P			
		< IC >			
IC1001	8-759-828-80	IC M30805MG-205GP			
IC1004	8-759-988-58	IC BA6209N			
IC1005	8-759-675-78	IC UDA1360TS/N1.118			
IC1006	8-759-675-77	IC UDA1350AH			
		< COIL >			
L1001	1-412-533-21	INDUCTOR	47uH		
		< TRANSISTOR >			
Q1001	1-801-806-11	TRANSISTOR	DTC144EK-T146		
Q1002	8-729-602-36	TRANSISTOR	2SA1602TP-1EF		
Q1003	8-729-602-36	TRANSISTOR	2SA1602TP-1EF		
Q1004	8-729-403-35	TRANSISTOR	UN5113-TX		
Q2001	8-729-602-36	TRANSISTOR	2SA1602TP-1EF		
Q2002	8-729-038-67	TRANSISTOR	KRC102S		
		< RESISTOR >			
R1001	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R1002	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R1005	1-216-025-11	RES-CHIP	100	5%	1/10W
R1006	1-216-025-11	RES-CHIP	100	5%	1/10W
R1007	1-216-025-11	RES-CHIP	100	5%	1/10W
R1010	1-216-025-11	RES-CHIP	100	5%	1/10W
R1011	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1012	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1013	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1014	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1015	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1016	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1017	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1018	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1024	1-216-041-00	METAL CHIP	470	5%	1/10W
R1029	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1030	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R1033	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R1034	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1035	1-216-073-00	RES-CHIP	10K	5%	1/10W
R1036	1-216-295-00	SHORT	0		
R1057	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1058	1-216-025-11	RES-CHIP	100	5%	1/10W
R1059	1-216-025-11	RES-CHIP	100	5%	1/10W
R1060	1-216-025-11	RES-CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R1067	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1068	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1073	1-216-073-00	RES-CHIP	10K	5%	1/10W
R1075	1-216-025-11	RES-CHIP	100	5%	1/10W
R1076	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1077	1-216-295-00	SHORT	0		
R1078	1-216-864-11	METAL CHIP	0	5%	1/16W
R1080	1-216-864-11	METAL CHIP	0	5%	1/16W
R1081	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1082	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1085	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1087	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R1088	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R1090	1-216-817-11	METAL CHIP	470	5%	1/16W
R1091	1-216-813-11	METAL CHIP	220	5%	1/16W
R1092	1-216-813-11	METAL CHIP	220	5%	1/16W
R1093	1-216-033-00	METAL CHIP	220	5%	1/10W
R1094	1-216-813-11	METAL CHIP	220	5%	1/16W
R1095	1-216-039-00	METAL CHIP	390	5%	1/10W
R2002	1-216-296-11	SHORT	0		
R2005	1-216-864-11	METAL CHIP	0	5%	1/16W
R2006	1-216-809-11	METAL CHIP	100	5%	1/16W
R2007	1-216-845-11	METAL CHIP	100K	5%	1/16W
R2008	1-216-809-11	METAL CHIP	100	5%	1/16W
		< VIBRATOR >			
X1001	1-579-175-11	VIBRATOR, CERAMIC (10MHz)			
**********					
	A-2056-914-A	HEAD PHONE BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C132	1-124-584-00	ELECT	100uF	20%	10V
C135	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C232	1-124-584-00	ELECT	100uF	20%	10V
C235	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
		< FERRITE BEAD >			
FB101	1-469-144-21	FERRITE	0uH		
FB201	1-469-144-21	FERRITE	0uH		
FB301	1-469-144-21	FERRITE	0uH		
		< JACK >			
J301	1-794-453-11	JACK (PHONES)			
		< COIL >			
L101	1-412-006-31	INDUCTOR	10uH		
L201	1-412-006-31	INDUCTOR	10uH		
		< TRANSISTOR >			
Q132	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
Q232	8-729-920-31	TRANSISTOR	DTC343TK-T-146		

HEAD PHONE | LOADING | MAIN

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R128	1-216-801-11	METAL CHIP	22	5%	1/16W
R139	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R228	1-216-801-11	METAL CHIP	22	5%	1/16W
R239	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
**********					
	1-676-599-11	LOADING BOARD			
		**********			
		< CONNECTOR >			
* CN1	1-568-943-11	PIN, CONNECTOR 5P			
		< SWITCH >			
S1	1-771-799-11	SWITCH, LEVER (SLIDE)			(DISC TRAY OPEN DET)
**********					
	A-4725-837-A	MAIN BOARD, COMPLETE (CP500MD:AEP,UK)			
	A-4725-844-A	MAIN BOARD, COMPLETE (CP500MD:US,CND)			
	A-4725-849-A	MAIN BOARD, COMPLETE (CP500MD:AUS)			
	A-4725-851-A	MAIN BOARD, COMPLETE (CP500MD:TW)			
	A-4725-852-A	MAIN BOARD, COMPLETE (CP500MD:TH)			
	A-4726-237-A	MAIN BOARD, COMPLETE (CP500MD:CH)			
	A-4726-248-A	MAIN BOARD, COMPLETE (CP500MD:E51,HK)			
	A-4726-784-A	MAIN BOARD, COMPLETE (CP500K)			
		**********			
	4-217-354-11	BUSHING, INSULATING			
	7-685-546-14	SCREW +BTP	3X8		TYPE2 N-S
	7-685-647-79	SCREW +BVTP	3X10		TYPE2 N-S
		< CAPACITOR >			
C101	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C101	1-126-963-11	ELECT	4.7uF	20.00% 50V	(CP500MD:AEP,UK,E51,HK)
C102	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C102	1-126-963-11	ELECT	4.7uF	20.00% 50V	(CP500MD:AEP,UK,E51,HK)
C103	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C103	1-126-963-11	ELECT	4.7uF	20.00% 50V	(CP500MD:AEP,UK,E51,HK)
C104	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C104	1-126-963-11	ELECT	4.7uF	20.00% 50V	(CP500MD:AEP,UK,E51,HK)
C105	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C105	1-126-963-11	ELECT	4.7uF	20.00% 50V	(CP500MD:AEP,UK,E51,HK)
C106	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C106	1-104-664-11	ELECT	47uF	20.00% 16V	(CP500MD:AEP,UK)
C106	1-126-963-11	ELECT	4.7uF	20.00% 50V	(CP500MD:E51,HK)
C107	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C107	1-109-982-11	CERAMIC CHIP	1uF	10.00% 10V	(CP500MD:AEP,UK)
C107	1-115-467-11	CERAMIC CHIP	0.22uF	10.00% 10V	(CP500MD:E51,HK)
C108	1-115-467-11	CERAMIC CHIP	0.22uF	10.00% 10V	
C109	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C110	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C110	1-126-963-11	ELECT	4.7uF	20.00% 50V	(CP500MD:AEP,UK,E51,HK)
C111	1-164-245-11	CERAMIC CHIP	0.015uF	10.00% 25V	
C112	1-164-245-11	CERAMIC CHIP	0.015uF	10.00% 25V	
C113	1-107-826-11	CERAMIC CHIP	0.1uF	10.00% 16V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C113	1-115-467-11	CERAMIC CHIP	0.22uF	10.00% 10V	(CP500MD:AEP,UK,E51,HK)
C114	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C115	1-162-968-11	CERAMIC CHIP	0.0047uF	10% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C115	1-162-965-11	CERAMIC CHIP	0.0015uF	10% 50V	(CP500MD:AEP,UK,E51,HK)
C116	1-162-962-11	CERAMIC CHIP	470PF	10% 50V	
C117	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C118	1-107-826-11	CERAMIC CHIP	0.1uF	10.00% 16V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C118	1-115-467-11	CERAMIC CHIP	0.22uF	10.00% 10V	(CP500MD:AEP,UK,E51,HK)
C120	1-163-022-00	CERAMIC CHIP	0.012uF	10% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C120	1-164-245-11	CERAMIC CHIP	0.015uF	10.00% 25V	(CP500MD:AEP,UK,E51,HK)
C121	1-162-962-11	CERAMIC CHIP	470PF	10% 50V	
C123	1-126-964-11	ELECT	10uF	20.00% 50V	
C124	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C124	1-162-962-11	CERAMIC CHIP	470PF	10% 50V	(CP500MD:AEP,UK,E51,HK)
C125	1-126-965-11	ELECT	22uF	20.00% 50V	
C127	1-130-495-00	MYLAR	0.1uF	5% 50V	
C128	1-130-495-00	MYLAR	0.1uF	5% 50V	
C130	1-115-467-11	CERAMIC CHIP	0.22uF	10.00% 10V	
C133	1-115-467-11	CERAMIC CHIP	0.22uF	10.00% 10V	
C140	1-162-962-11	CERAMIC CHIP	470PF	10% 50V	
C150	1-104-664-11	ELECT	47uF	20.00% 16V	
C201	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C201	1-126-963-11	ELECT	4.7uF	20.00% 50V	(CP500MD:AEP,UK,E51,HK)
C202	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C202	1-126-963-11	ELECT	4.7uF	20.00% 50V	(CP500MD:AEP,UK,E51,HK)
C203	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C203	1-126-963-11	ELECT	4.7uF	20.00% 50V	(CP500MD:AEP,UK,E51,HK)
C204	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C204	1-126-963-11	ELECT	4.7uF	20.00% 50V	(CP500MD:AEP,UK,E51,HK)
C205	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)
C205	1-126-963-11	ELECT	4.7uF	20.00% 50V	(CP500MD:AEP,UK,E51,HK)
C206	1-126-964-11	ELECT	10uF	20.00% 50V	(EXCEPT CP500MD:AEP,UK,E51,HK)

Ref. No.	Part No.	Description				Remarks
C206	1-104-664-11	ELECT	47uF	20.00%	16V	
						(CP500MD:AEP,UK)
C206	1-126-963-11	ELECT	4.7uF	20.00%	50V	
						(CP500MD:E51,HK)
C207	1-126-964-11	ELECT	10uF	20.00%	50V	
						(EXCEPT CP500MD:AEP,UK,E51,HK)
C207	1-109-982-11	CERAMIC CHIP	1uF	10.00%	10V	
						(CP500MD:AEP,UK)
C207	1-115-467-11	CERAMIC CHIP	0.22uF	10.00%	10V	
						(CP500MD:E51,HK)
C208	1-115-467-11	CERAMIC CHIP	0.22uF	10.00%	10V	
C209	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C210	1-126-964-11	ELECT	10uF	20.00%	50V	
						(EXCEPT CP500MD:AEP,UK,E51,HK)
C210	1-126-963-11	ELECT	4.7uF	20.00%	50V	
						(CP500MD:AEP,UK,E51,HK)
C211	1-164-245-11	CERAMIC CHIP	0.015uF	10.00%	25V	
C212	1-164-245-11	CERAMIC CHIP	0.015uF	10.00%	25V	
C213	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	
C214	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C215	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
						(EXCEPT CP500MD:AEP,UK,E51,HK)
C215	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V	
						(CP500MD:AEP,UK,E51,HK)
C216	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
						(EXCEPT CP500MD:AEP,UK,E51,HK)
C216	1-115-467-11	CERAMIC CHIP	0.22uF	10.00%	10V	
						(CP500MD:AEP,UK,E51,HK)
C217	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C218	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
						(EXCEPT CP500MD:AEP,UK,E51,HK)
C218	1-115-467-11	CERAMIC CHIP	0.22uF	10.00%	10V	
						(CP500MD:AEP,UK,E51,HK)
C220	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V	
						(EXCEPT CP500MD:AEP,UK,E51,HK)
C220	1-164-245-11	CERAMIC CHIP	0.015uF	10.00%	25V	
						(CP500MD:AEP,UK,E51,HK)
C221	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	
C223	1-126-964-11	ELECT	10uF	20.00%	50V	
C224	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
						(EXCEPT CP500MD:AEP,UK,E51,HK)
C224	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	
						(CP500MD:AEP,UK,E51,HK)
C225	1-126-965-11	ELECT	22uF	20.00%	50V	
C227	1-130-495-00	MYLAR	0.1uF	5%	50V	
C228	1-130-495-00	MYLAR	0.1uF	5%	50V	
C230	1-115-467-11	CERAMIC CHIP	0.22uF	10.00%	10V	
C233	1-115-467-11	CERAMIC CHIP	0.22uF	10.00%	10V	
C240	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	
C250	1-104-664-11	ELECT	47uF	20.00%	16V	
C300	1-126-961-11	ELECT	2.2uF	20.00%	50V	
						(EXCEPT CP500MD:AEP,UK)
C300	1-126-964-11	ELECT	10uF	20.00%	50V	
						(CP500MD:AEP,UK)
C301	1-104-664-11	ELECT	47uF	20.00%	16V	
						(EXCEPT CP500MD:AEP,UK,E51,HK)
C301	1-126-964-11	ELECT	10uF	20.00%	50V	
						(CP500MD:AEP,UK,E51,HK)
C302	1-126-941-11	ELECT	470uF	20.00%	16V	
C304	1-104-665-11	ELECT	100uF	20.00%	16V	
C305	1-104-665-11	ELECT	100uF	20.00%	16V	
						(EXCEPT CP500MD:AEP,UK)

Ref. No.	Part No.	Description				Remarks
C305	1-104-664-11	ELECT	47uF	20.00%	16V	
						(CP500MD:AEP,UK)
C306	1-126-964-11	ELECT	10uF	20.00%	50V	
						(EXCEPT CP500MD:AEP,UK,E51,HK)
C306	1-126-963-11	ELECT	4.7uF	20.00%	50V	
						(CP500MD:AEP,UK,E51,HK)
C307	1-104-665-11	ELECT	100uF	20.00%	16V	
						(EXCEPT CP500MD:AEP,UK,E51,HK)
C307	1-126-935-11	ELECT	470uF	20.00%	10V	
						(CP500MD:AEP,UK,E51,HK)
C308	1-126-961-11	ELECT	2.2uF	20.00%	50V	
C310	1-104-665-11	ELECT	100uF	20.00%	16V	
C311	1-124-903-11	ELECT	1uF	20.00%	50V	
						(EXCEPT CP500MD:E51,HK)
C311	1-104-665-11	ELECT	100uF	20.00%	16V	
						(CP500MD:E51,HK)
C312	1-104-665-11	ELECT	100uF	20.00%	16V	
C313	1-126-965-11	ELECT	22uF	20.00%	50V	
C314	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
C316	1-126-955-11	ELECT	4700uF	20.00%	35V	
C317	1-126-955-11	ELECT	4700uF	20.00%	35V	
C318	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
C319	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
C320	1-126-942-61	ELECT	1000uF	20.00%	25V	
C321	1-126-944-11	ELECT	3300uF	20.00%	25V	
C322	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
C323	1-104-665-11	ELECT	100uF	20.00%	16V	
C324	1-104-665-11	ELECT	100uF	20.00%	16V	
C325	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
C326	1-104-665-11	ELECT	100uF	20.00%	16V	
C327	1-126-964-11	ELECT	10uF	20.00%	50V	
C328	1-126-941-11	ELECT	470uF	20.00%	16V	
C329	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
C330	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
C331	1-126-767-11	ELECT	1000uF	20.00%	10V	
C332	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
C333	1-104-666-11	ELECT	220uF	20.00%	10V	
						(EXCEPT CP500MD:AEP,UK)
C333	1-104-665-11	ELECT	100uF	20.00%	16V	
						(CP500MD:AEP,UK)
C335	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
C336	1-104-665-11	ELECT	100uF	20.00%	16V	
C337	1-126-964-11	ELECT	10uF	20.00%	50V	
C338	1-126-935-11	ELECT	470uF	20.00%	10V	
C339	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
C340	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V	
C341	1-104-665-11	ELECT	100uF	20.00%	16V	
C342	1-124-903-11	ELECT	1uF	20.00%	50V	
C343	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V	
						(EXCEPT CP500MD:AEP,UK)
C343	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
						(CP500MD:AEP,UK)
C344	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
						(EXCEPT CP500MD:AEP,UK)
C344	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	
						(CP500MD:AEP,UK)
C345	1-126-767-11	ELECT	1000uF	20.00%	10V	
C347	1-104-664-11	ELECT	47uF	20.00%	16V	

MAIN

Ref. No.	Part No.	Description			Remarks
C348	1-107-826-11	CERAMIC CHIP	0.1uF	10.00% 16V	
C349	1-107-826-11	CERAMIC CHIP	0.1uF	10.00% 16V	
C350	1-124-903-11	ELECT	1uF	20.00% 50V	
C351	1-107-826-11	CERAMIC CHIP	0.1uF	10.00% 16V	
C352	1-107-826-11	CERAMIC CHIP	0.1uF	10.00% 16V	
C353	1-104-664-11	ELECT	47uF	20.00% 16V	
C354	1-107-826-11	CERAMIC CHIP	0.1uF	10.00% 16V	
C355	1-126-961-11	ELECT	2.2uF	20.00% 50V	
				(CP500MD:AEP,UK)	
C356	1-126-964-11	ELECT	10uF	20.00% 50V	
				(CP500MD:AEP,UK)	
C357	1-107-826-11	CERAMIC CHIP	0.1uF	10.00% 16V	
C358	1-164-739-11	CERAMIC CHIP	560PF	5.00% 50V	
				(CP500MD:AEP,UK)	
C360	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
				(CP500MD:AEP,UK)	
C361	1-162-921-11	CERAMIC CHIP	33PF	5% 50V	
				(CP500MD:AEP,UK)	
C361	1-164-185-11	CERAMIC CHIP	13PF	5.00% 50V	
				(CP500MD:AEP,UK)	
C362	1-162-921-11	CERAMIC CHIP	33PF	5% 50V	
				(CP500MD:AEP,UK)	
C362	1-164-185-11	CERAMIC CHIP	13PF	5.00% 50V	
				(CP500MD:AEP,UK)	
C363	1-104-665-11	ELECT	100uF	20.00% 16V	
C364	1-162-961-11	CERAMIC CHIP	330PF	10% 50V	
				(CP500MD:AEP,UK)	
C365	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
				(CP500MD:AEP,UK)	
C366	1-104-664-11	ELECT	47uF	20.00% 10V	
				(CP500MD:AEP,UK)	
C367	1-107-826-11	CERAMIC CHIP	0.1uF	10.00% 16V	
				(CP500MD:AEP,UK)	
C368	1-115-456-21	CAPACITOR	0.22F	5.5V	
C369	1-115-456-21	CAPACITOR	0.22F	5.5V	
C373	1-104-665-11	ELECT	100uF	20.00% 25V	
C374	1-104-666-11	ELECT	220uF	20.00% 10V	
C377	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
C378	1-164-315-11	CERAMIC CHIP	470PF	5.00% 50V	
C379	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
				(CP500MD:AEP,UK)	
C379	1-164-315-11	CERAMIC CHIP	470PF	5.00% 50V	
				(EXCEPT CP500MD:AEP,UK)	
C380	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
				(EXCEPT CP500MD:AEP,UK)	
C380	1-216-864-11	METAL CHIP	0	5% 1/16W	
				(CP500MD:AEP,UK)	
C381	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
C383	1-162-302-11	CERAMIC	0.0022uF	30.00% 16V	
C390	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
C392	1-107-826-11	CERAMIC CHIP	0.1uF	10.00% 16V	
				(EXCEPT CP500MD:AEP,UK,E51,HK)	
C392	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
				(CP500MD:AEP,UK,E51,HK)	
C393	1-165-176-11	CERAMIC CHIP	0.047uF	10.00% 16V	
C394	1-125-891-11	CERAMIC CHIP	0.47uF	10.00% 10V	
C507	1-164-156-21	CETAMIC CHIP	0.1uF	25V	
C509	1-104-665-11	ELECT	100uF	20.00% 16V	
C801	1-164-160-11	CERAMIC CHIP	20PF	5.00% 50V	
C802	1-162-919-11	CERAMIC CHIP	22PF	5% 50V	
C803	1-107-826-11	CERAMIC CHIP	0.1uF	10.00% 16V	
C804	1-107-826-11	CERAMIC CHIP	0.1uF	10.00% 16V	
C805	1-104-665-11	ELECT	100uF	20.00% 16V	

Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
CN301	1-794-470-11	CONNECTOR, FFC/FPC 25P	
CN302	1-779-290-11	CONNECTOR,FFC(LIF(NON-ZIF))22P	
* CN303	1-569-366-11	SOCKET, CONNECTOR 18P	
* CN304	1-565-650-11	SOCKET, CONNECTOR 25P	
* CN306	1-568-954-11	PIN, CONNECTOR 5P	
* CN308	1-568-954-11	PIN, CONNECTOR 5P	
		< DIODE >	
D303	8-719-200-82	DIODE 11ES2-TA1B	
D304	8-719-050-84	DIODE RB441QT-77	
D305	8-719-200-82	DIODE 11ES2-TA1B	
D306	8-719-200-82	DIODE 11ES2-TA1B	
D307	8-719-200-82	DIODE 11ES2-TA1B	
D308	8-719-991-33	DIODE 1SS133T-77	
D309	8-719-991-33	DIODE 1SS133T-77	
D310	8-719-921-75	DIODE MTZN-T-77-10B	
D311	8-719-921-63	DIODE MTZJ-T-77-7.5B	
D312	8-719-109-89	DIODE MTZJ-T-77-5.6B	
D313	8-719-921-80	DIODE MTZJ-T-77-11B	
D314	8-719-200-82	DIODE 11ES2-TA1B	
D315	8-719-200-82	DIODE 11ES2-TA1B	
D316	8-719-200-82	DIODE 11ES2-TA1B	
D317	8-719-200-82	DIODE 11ES2-TA1B	
D318	8-719-200-82	DIODE 11ES2-TA1B	
D319	8-719-991-33	DIODE 1SS133T-77	
D320	8-719-050-84	DIODE RB441QT-77	
D321	8-719-991-33	DIODE 1SS133T-77	
D322	8-719-991-33	DIODE 1SS133T-77	
D323	8-719-991-33	DIODE 1SS133T-77	
D324	8-719-991-33	DIODE 1SS133T-77	
D325	8-719-991-33	DIODE 1SS133T-77	
D326	8-719-200-82	DIODE 11ES2-TA1B	
D330	8-719-921-40	DIODE MTZJ-T-77-4.7C	
D331	8-719-982-11	DIODE MTZJ-T-77-4.3B (CP500MD:AEP,UK)	
D332	8-719-991-33	DIODE 1SS133T-77 (CP500MD:AEP,UK)	
D336	8-719-921-40	DIODE MTZJ-T-77-4.7C	
		< FERRITE BEAD/CONDUCTOR >	
FB301	1-414-813-11	FERRITE 0uH	
FB302	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB303	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB304	1-414-813-11	FERRITE 0uH	
FB306	1-414-813-11	FERRITE 0uH	
FB307	1-414-813-11	FERRITE 0uH	
FB308	1-414-813-11	FERRITE 0uH	
FB309	1-414-813-11	FERRITE 0uH	
FB310	1-414-813-11	FERRITE 0uH	
FB311	1-414-813-11	FERRITE 0uH	
FB312	1-414-813-11	FERRITE 0uH	
FB313	1-414-813-11	FERRITE 0uH	
FB314	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB315	1-414-813-11	FERRITE 0uH	
FB316	1-414-813-11	FERRITE 0uH	
FB317	1-414-813-11	FERRITE 0uH	
FB318	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB319	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB320	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB321	1-216-864-11	METAL CHIP 0 5% 1/16W	

Ref. No.	Part No.	Description			Remarks
FB322	1-410-993-11	INDUCTOR CHIP	1uH		
FB323	1-216-864-11	METAL CHIP	0	5%	1/16W
FB324	1-216-864-11	METAL CHIP	0	5%	1/16W
FB325	1-216-864-11	METAL CHIP	0	5%	1/16W
FB326	1-216-864-11	METAL CHIP	0	5%	1/16W
FB327	1-216-864-11	METAL CHIP	0	5%	1/16W
		< IC >			
IC101	8-759-584-38	IC TDA7296			
IC201	8-759-584-38	IC TDA7296			
IC301	8-759-000-00	IC MC6800P (CP500MD:CH)			
IC301	6-700-261-01	IC BD3861FS (EXCEPT CP500MD:CH)			
IC302	8-759-359-49	IC NJM3414AV(TE2)			
IC303	8-759-646-54	IC KIA7808API			
IC305	8-759-038-14	IC MC74HC4538N (CP500MD:CH)			
IC305	8-759-686-72	IC uPC29L04J-T (EXCEPT CP500MD:CH)			
IC306	6-800-349-01	IC M30622MGA-A64FP			
IC307	8-759-584-65	IC KA3082			
IC308	8-759-481-02	IC M62016L			
IC309	8-759-560-51	IC BU1924F (CP500MD:AEP,UK)			
IC310	8-759-646-53	IC KIA7812API			
IC311	8-759-646-54	IC KIA7808API			
IC313	8-759-646-54	IC KIA7808API			
IC314	8-759-646-52	IC KIA7805API			
IC315	8-759-646-52	IC KIA7805API			
IC316	8-759-637-58	IC PST592C-T			
IC503	8-759-548-57	IC SN74LV00ANSR			
		< CONDUCTOR/RESISTOR >			
JR101	1-216-864-11	METAL CHIP	0	5%	1/16W
JR201	1-216-864-11	METAL CHIP	0	5%	1/16W
JR301	1-216-864-11	METAL CHIP	0	5%	1/16W
JR302	1-216-864-11	METAL CHIP	0	5%	1/16W
JR304	1-216-864-11	METAL CHIP	0	5%	1/16W
JR305	1-216-864-11	METAL CHIP	0	5%	1/16W
JR310	1-249-401-11	CARBON	47	5%	1/4W
		< COIL >			
L101	1-420-872-00	COIL, AIR-CORE			
L201	1-420-872-00	COIL, AIR-CORE			
		< JACK >			
PJ301	1-815-636-11	JACK, PIN 2P (ANALOG IN)			
		< TRANSISTOR >			
Q101	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
Q201	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
Q303	8-729-056-23	TRANSISTOR	STC352-OY		
Q304	8-729-056-23	TRANSISTOR	STC352-OY		
Q305	8-729-055-91	TRANSISTOR	SRA2202S		
Q306	8-729-055-94	TRANSISTOR	SRC1202S		
Q307	8-729-055-91	TRANSISTOR	SRA2202S		
Q308	8-729-055-94	TRANSISTOR	SRC1202S		
Q309	8-729-019-00	TRANSISTOR	KTC2026		
Q310	8-729-055-91	TRANSISTOR	SRA2202S		
Q311	8-729-055-94	TRANSISTOR	SRC1202S		
Q312	8-729-019-00	TRANSISTOR	KTC2026		
Q315	8-729-055-91	TRANSISTOR	SRA2202S		
Q316	8-729-055-94	TRANSISTOR	SRC1202S		
Q318	8-729-055-91	TRANSISTOR	SRA2202S		

Ref. No.	Part No.	Description			Remarks
Q319	8-729-034-51	TRANSISTOR	KTC3875		
Q320	8-729-202-56	TRANSISTOR	2SA950-Y-TPE2		
Q321	8-729-055-94	TRANSISTOR	SRC1202S		
Q322	8-729-202-56	TRANSISTOR	2SA950-Y-TPE2		
Q323	8-729-055-94	TRANSISTOR	SRC1202S		
Q329	8-729-120-28	TRANSISTOR	2SC2412K-T-146-QR		(CP500MD:AEP,UK)
Q330	8-729-055-91	TRANSISTOR	SRA2202S		
Q331	8-729-055-94	TRANSISTOR	SRC1202S		
Q333	8-729-055-94	TRANSISTOR	SRC1202S		
Q335	8-729-037-02	TRANSISTOR	KTA1266Y-AT		
Q337	8-729-055-94	TRANSISTOR	SRC1202S		
Q339	8-729-055-94	TRANSISTOR	SRC1202S		
		< RESISTOR >			
R102	1-249-421-11	CARBON	2.2K	5%	1/4W F (EXCEPT CP500MD:AEP,UK,E51,HK)
R102	1-216-837-11	METAL CHIP	22K	5%	1/16W (CP500MD:AEP,UK,E51,HK)
R104	1-216-833-11	METAL CHIP	10K	5%	1/16W (EXCEPT CP500MD:AEP,UK,E51,HK)
R104	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (CP500MD:AEP,UK,E51,HK)
R105	1-249-421-11	CARBON	2.2K	5%	1/4W F
R106	1-216-833-11	METAL CHIP	10K	5%	1/16W (EXCEPT CP500MD:AEP,UK,E51,HK)
R106	1-216-849-11	METAL CHIP	220K	5%	1/16W (CP500MD:AEP,UK,E51,HK)
R107	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R108	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R109	1-249-421-11	CARBON	2.2K	5%	1/4W F
R110	1-216-821-11	METAL CHIP	1K	5%	1/16W (EXCEPT CP500MD:AEP,UK,E51,HK)
R110	1-216-837-11	METAL CHIP	22K	5%	1/16W (CP500MD:AEP,UK,E51,HK)
R112	1-216-831-11	METAL CHIP	6.8K	5%	1/16W (EXCEPT CP500MD:AEP,UK)
R112	1-216-833-11	METAL CHIP	10K	5%	1/16W (CP500MD:AEP,UK)
R113	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R121	1-216-830-11	METAL CHIP	5.6K	5%	1/16W (EXCEPT CP500MD:AEP,UK,E51,HK)
R121	1-216-833-11	METAL CHIP	10K	5%	1/16W (CP500MD:AEP,UK)
R121	1-216-832-11	METAL CHIP	8.2K	5%	1/16W (CP500MD:E51,HK)
R122	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R123	1-216-835-11	METAL CHIP	15K	5%	1/16W (CP500K/CP500MD:AUS,CH,TW,TH)
R123	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (CP500MD:AEP,UK,E51,HK)
R123	1-216-830-11	METAL CHIP	5.6K	5%	1/16W (CP500MD:US,CND)
R126	1-249-417-11	CARBON	1K	5%	1/4W F
R127	1-216-817-11	METAL CHIP	470	5%	1/16W
R128	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R129	1-216-837-11	METAL CHIP	22K	5%	1/16W
R130	1-216-845-11	METAL CHIP	100K	5%	1/16W
R131	1-249-389-11	CARBON	4.7	5%	1/4W F
R132	1-216-833-11	METAL CHIP	10K	5%	1/16W
R133	1-216-830-11	METAL CHIP	5.6K	5%	1/16W (EXCEPT CP500MD:AEP,UK,E51,HK)

MAIN

Ref. No.	Part No.	Description			Remarks
R133	1-216-833-11	METAL CHIP	10K	5%	1/16W
					(CP500MD:AEP,UK,E51,HK)
R134	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R134	1-216-833-11	METAL CHIP	10K	5%	1/16W
					(CP500MD:AEP,UK)
R134	1-218-272-11	RES-CHIP	5.1K	5%	1/16W
					(CP500MD:E51,HK)
R135	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R136	1-216-833-11	METAL CHIP	10K	5%	1/16W
R143	1-216-833-11	METAL CHIP	10K	5%	1/16W
R201	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R201	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
					(CP500MD:AEP,UK,E51,HK)
R202	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R202	1-216-837-11	METAL CHIP	22K	5%	1/16W
					(CP500MD:AEP,UK,E51,HK)
R204	1-216-833-11	METAL CHIP	10K	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R204	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
					(CP500MD:AEP,UK,E51,HK)
R205	1-249-421-11	CARBON	2.2K	5%	1/4W F
R206	1-216-833-11	METAL CHIP	10K	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R206	1-216-849-11	METAL CHIP	220K	5%	1/16W
					(CP500MD:AEP,UK,E51,HK)
R207	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R208	1-216-821-11	METAL CHIP	1K	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R208	1-216-837-11	METAL CHIP	22K	5%	1/16W
					(CP500MD:AEP,UK,E51,HK)
R209	1-249-421-11	CARBON	2.2K	5%	1/4W F
R212	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
					(EXCEPT CP500MD:AEP,UK)
R212	1-216-833-11	METAL CHIP	10K	5%	1/16W
					(CP500MD:AEP,UK)
R213	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R221	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R221	1-216-833-11	METAL CHIP	10K	5%	1/16W
					(CP500MD:AEP,UK)
R221	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
					(CP500MD:E51,HK)
R222	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R223	1-216-835-11	METAL CHIP	15K	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R223	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
					(CP500MD:AEP,UK,E51,HK)
R226	1-216-821-11	METAL CHIP	1K	5%	1/16W
R227	1-216-817-11	METAL CHIP	470	5%	1/16W
R228	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R229	1-216-837-11	METAL CHIP	22K	5%	1/16W
R230	1-216-845-11	METAL CHIP	100K	5%	1/16W
R231	1-249-389-11	CARBON	4.7	5%	1/4W F
R232	1-216-833-11	METAL CHIP	10K	5%	1/16W
R233	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R233	1-216-833-11	METAL CHIP	10K	5%	1/16W
					(CP500MD:AEP,UK,E51,HK)
R234	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R234	1-216-833-11	METAL CHIP	10K	5%	1/16W
					(CP500MD:AEP,UK)

Ref. No.	Part No.	Description			Remarks
R234	1-218-272-11	RES-CHIP	5.1K	5%	1/16W
					(CP500MD:E51,HK)
R235	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R236	1-216-833-11	METAL CHIP	10K	5%	1/16W
R243	1-216-833-11	METAL CHIP	10K	5%	1/16W
R300	1-216-813-11	METAL CHIP	220	5%	1/16W
R301	1-216-809-11	METAL CHIP	100	5%	1/16W
R302	1-249-411-11	CARBON	330	5%	1/4W
R303	1-249-413-11	CARBON	470	5%	1/4W F
R304	1-216-864-11	METAL CHIP	0	5%	1/16W
R305	1-216-833-11	METAL CHIP	10K	%	1/16W
R307	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R313	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R314	1-216-815-11	METAL CHIP	330	5%	1/16W
R315	1-216-809-11	METAL CHIP	100	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R315	1-216-864-11	METAL CHIP	0	5%	1/16W
					(CP500MD:AEP,UK,E51,HK)
R316	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R317	1-216-849-11	METAL CHIP	220K	5%	1/16W
R319	1-216-833-11	METAL CHIP	10K	5%	1/16W
R320	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R321	1-216-833-11	METAL CHIP	10K	5%	1/16W
R322	1-216-809-11	METAL CHIP	100	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R322	1-216-864-11	METAL CHIP	0	5%	1/16W
					(CP500MD:AEP,UK,E51,HK)
R326	1-216-809-11	METAL CHIP	100	5%	1/16W
R327	1-216-833-11	METAL CHIP	10K	5%	1/16W
R328	1-216-833-11	METAL CHIP	10K	5%	1/16W
R329	1-216-841-11	METAL CHIP	47K	5%	1/16W
R330	1-216-841-11	METAL CHIP	47K	5%	1/16W
R331	1-216-837-11	METAL CHIP	22K	5%	1/16W
R333	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R334	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R336	1-216-809-11	METAL CHIP	100	5%	1/16W
R340	1-216-833-11	METAL CHIP	10K	5%	1/16W
R341	1-216-833-11	METAL CHIP	10K	5%	1/16W
R342	1-216-809-11	METAL CHIP	100	5%	1/16W
					(CP500MD:AEP,UK)
R343	1-216-857-11	METAL CHIP	1M	5%	1/16W
					(CP500MD:AEP,UK)
R344	1-216-821-11	METAL CHIP	1K	5%	1/16W
					(CP500MD:AEP,UK)
R345	1-216-809-11	METAL CHIP	100	5%	1/16W
					(CP500MD:AEP,UK)
R346	1-216-845-11	METAL CHIP	100K	5%	1/16W
					(CP500MD:AEP,UK)
R347	1-216-821-11	METAL CHIP	1K	5%	1/16W
					(CP500MD:AEP,UK)
R348	1-216-853-11	METAL CHIP	470K	5%	1/16W
					(CP500MD:AEP,UK)
R349	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
					(CP500MD:AEP,UK)
R350	1-216-809-11	METAL CHIP	100	5%	1/16W
					(CP500MD:AEP,UK)
R351	1-216-811-11	METAL CHIP	150	5%	1/16W
					(CP500MD:AEP,UK)
R352	1-216-841-11	METAL CHIP	47K	5%	1/16W
R353	1-216-841-11	METAL CHIP	47K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R355	1-216-821-11	METAL CHIP	1K	5%	1/16W
R356	1-216-821-11	METAL CHIP	1K	5%	1/16W
R357	1-216-821-11	METAL CHIP	1K	5%	1/16W
R358	1-216-821-11	METAL CHIP	1K	5%	1/16W
R360	1-216-797-11	METAL CHIP	10	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R360	1-216-864-11	METAL CHIP	0	5%	1/16W
					(CP500MD:AEP,UK,E51,HK)
R361	1-216-833-11	METAL CHIP	10K	5%	1/16W
R362	1-216-845-11	METAL CHIP	100K	5%	1/16W
					(EXCEPT P500MD:E51,HK)
R362	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
					(CP500MD:E51,HK)
R363	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R364	1-249-413-11	CARBON	470	5%	1/4W F
R365	1-216-833-11	METAL CHIP	10K	5%	1/16W
R366	1-216-833-11	METAL CHIP	10K	5%	1/16W
R367	1-216-843-11	METAL CHIP	68K	5%	1/16W
R368	1-216-841-11	METAL CHIP	47K	5%	1/16W
R370	1-216-841-11	METAL CHIP	47K	5%	1/16W
R371	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
					(EXCEPT CP500MD:AEP,UK,E51,HK)
R371	1-216-821-11	METAL CHIP	1K	5%	1/16W
					(CP500MD:AEP,UK,E51,HK)
R372	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R373	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R374	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R389	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
					(EXCEPT CP500MD:US,CND)
R389	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
					(CP500MD:US,CND)
R401	1-216-841-11	METAL CHIP	47K	5%	1/16W
R402	1-216-821-11	METAL CHIP	1K	5%	1/16W
R403	1-216-821-11	METAL CHIP	1K	5%	1/16W
R404	1-216-821-11	METAL CHIP	1K	5%	1/16W
R405	1-216-821-11	METAL CHIP	1K	5%	1/16W
R406	1-216-821-11	METAL CHIP	1K	5%	1/16W
R407	1-216-821-11	METAL CHIP	1K	5%	1/16W
R409	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R419	1-216-821-11	METAL CHIP	1K	5%	1/16W
R420	1-216-821-11	METAL CHIP	1K	5%	1/16W
R421	1-216-821-11	METAL CHIP	1K	5%	1/16W
R422	1-216-821-11	METAL CHIP	1K	5%	1/16W
R423	1-216-821-11	METAL CHIP	1K	5%	1/16W
R424	1-216-821-11	METAL CHIP	1K	5%	1/16W
R425	1-216-821-11	METAL CHIP	1K	5%	1/16W
R426	1-216-821-11	METAL CHIP	1K	5%	1/16W
R427	1-216-821-11	METAL CHIP	1K	5%	1/16W
R428	1-216-821-11	METAL CHIP	1K	5%	1/16W
R429	1-247-807-31	CARBON	100	5%	1/4W
R430	1-247-807-31	CARBON	100	5%	1/4W
R432	1-216-821-11	METAL CHIP	1K	5%	1/16W
R433	1-216-821-11	METAL CHIP	1K	5%	1/16W
R434	1-216-821-11	METAL CHIP	1K	5%	1/16W
R435	1-249-417-11	CARBON	1K	5%	1/4W F
R436	1-249-417-11	CARBON	1K	5%	1/4W F
R437	1-249-417-11	CARBON	1K	5%	1/4W F
R438	1-249-417-11	CARBON	1K	5%	1/4W F

Ref. No.	Part No.	Description			Remarks
R439	1-216-821-11	METAL CHIP	1K	5%	1/16W
R440	1-216-821-11	METAL CHIP	1K	5%	1/16W
R441	1-216-821-11	METAL CHIP	1K	5%	1/16W
R442	1-249-417-11	CARBON	1K	5%	1/4W F
R443	1-216-821-11	METAL CHIP	1K	5%	1/16W
R444	1-216-801-11	METAL CHIP	22	5%	1/16W
R445	1-216-821-11	METAL CHIP	1K	5%	1/16W
R446	1-216-845-11	METAL CHIP	100K	5%	1/16W
R448	1-216-821-11	METAL CHIP	1K	5%	1/16W
R449	1-216-821-11	METAL CHIP	1K	5%	1/16W
R450	1-216-821-11	METAL CHIP	1K	5%	1/16W
R452	1-216-821-11	METAL CHIP	1K	5%	1/16W
R453	1-216-821-11	METAL CHIP	1K	5%	1/16W
R454	1-216-833-11	METAL CHIP	10K	5%	1/16W
R455	1-216-821-11	METAL CHIP	1K	5%	1/16W
R456	1-216-821-11	METAL CHIP	1K	5%	1/16W
R457	1-216-821-11	METAL CHIP	1K	5%	1/16W
R458	1-216-821-11	METAL CHIP	1K	5%	1/16W
R466	1-216-821-11	METAL CHIP	1K	5%	1/16W
R467	1-216-821-11	METAL CHIP	1K	5%	1/16W
R468	1-216-821-11	METAL CHIP	1K	5%	1/16W
R474	1-216-821-11	METAL CHIP	1K	5%	1/16W
R475	1-249-417-11	CARBON	1K	5%	1/4W F
R476	1-216-821-11	METAL CHIP	1K	5%	1/16W
R477	1-216-821-11	METAL CHIP	1K	5%	1/16W
R478	1-216-821-11	METAL CHIP	1K	5%	1/16W
R479	1-216-821-11	METAL CHIP	1K	5%	1/16W
R480	1-216-821-11	METAL CHIP	1K	5%	1/16W
R481	1-216-821-11	METAL CHIP	1K	5%	1/16W
R482	1-216-821-11	METAL CHIP	1K	5%	1/16W
R483	1-216-821-11	METAL CHIP	1K	5%	1/16W
R484	1-216-821-11	METAL CHIP	1K	5%	1/16W
R485	1-216-821-11	METAL CHIP	1K	5%	1/16W
R486	1-216-821-11	METAL CHIP	1K	5%	1/16W
R487	1-216-821-11	METAL CHIP	1K	5%	1/16W
R488	1-216-821-11	METAL CHIP	1K	5%	1/16W
R489	1-216-821-11	METAL CHIP	1K	5%	1/16W
R490	1-216-821-11	METAL CHIP	1K	5%	1/16W
R491	1-216-821-11	METAL CHIP	1K	5%	1/16W
R492	1-216-821-11	METAL CHIP	1K	5%	1/16W
R493	1-216-821-11	METAL CHIP	1K	5%	1/16W
R494	1-216-821-11	METAL CHIP	1K	5%	1/16W
R495	1-216-864-11	METAL CHIP	0	5%	1/16W
					(EXCEPT CP500MD:E51,HK)
R495	1-216-811-11	METAL CHIP	150	5%	1/16W
					(CP500MD:E51,HK)
R497	1-216-864-11	METAL CHIP	0	5%	1/16W
					(EXCEPT CP500MD:US,CND,AEP,UK)
R497	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
					(CP500MD:US,CND,AEP,UK)
R509	1-216-821-11	METAL CHIP	1K	5%	1/16W
R513	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
		< TERMINAL BOARD >			
SJ301	1-694-820-11	TERMINAL BOARD (SPEAKER)			
		< TERMINAL >			
TH1	1-537-770-11	TERMINAL BOARD, GROUND			
TH2	1-537-770-11	TERMINAL BOARD, GROUND			

MAIN **MD-INDICATE** **OPTICAL** **POWER**

Ref. No.	Part No.	Description			Remarks
		< VIBRATOR >			
X301	1-579-242-41	VIBRATOR, CRYSTAL (4.332Hz)			(CP500MD:AEP,UK)
X801	1-567-098-41	VIBRATOR, CRYSTAL (32.768MHz)			
X802	1-781-107-21	VIBRATOR, SERAMIC (10MHz)			
		**********			
	A-2056-914-A	MD-INDICATE BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
* CN806	1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P			
		< DIODE >			
D813	8-719-084-70	DIODE SY3318-V-S1-T (BACK LIGHT)			
D814	8-719-084-70	DIODE SY3318-V-S1-T (BACK LIGHT)			
		< TRANSISTOR >			
Q802	8-729-900-53	TRANSISTOR DTC114EKA-T146			
		< RESISTOR >			
R885	1-216-817-11	METAL CHIP	470	5%	1/16W
R886	1-216-817-11	METAL CHIP	470	5%	1/16W
		**********			
	A-2056-914-A	OPTICAL BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C550	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C551	1-104-665-11	ELECT	100uF	20.00%	10V
C553	1-104-665-11	ELECT	100uF	20.00%	10V
C554	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< CONNECTOR >			
* CN551	1-506-989-11	PIN, CONNECTOR (PC BOARD) 7P			
		< FERRITE BEAD >			
FB551	1-469-144-21	FERRITE	0uH		
		< IC >			
IC551	8-749-019-61	IC JFJ4000-01SY (DIGITAL OPTICAL IN)			
		< CONNECTOR >			
J302	1-774-136-11	CONNECTOR, ROUND TYPE 6P (PC LINK)			
		< TRANSISTOR >			
Q301	8-729-048-96	TRANSISTOR	2SK1825		
Q302	8-729-048-96	TRANSISTOR	2SK1825		
		< RESISTOR >			
R304	1-216-797-11	METAL CHIP	10	5%	1/16W
R305	1-216-797-11	METAL CHIP	10	5%	1/16W
R306	1-216-845-11	METAL CHIP	100K	5%	1/16W
R310	1-216-835-11	METAL CHIP	15K	5%	1/16W
R312	1-216-833-11	METAL CHIP	10K	5%	1/16W
R336	1-216-864-11	METAL CHIP	0	5%	1/16W
R337	1-216-864-11	METAL CHIP	0	5%	1/16W
		**********			

Ref. No.	Part No.	Description			Remarks
	A-4725-836-A	POWER BOARD, COMPLETE			(CP500K/CP500MD:AEP,UK,AUS,CH,TH)
	A-4725-843-A	POWER BOARD, COMPLETE			(CP500MD:US,CND)
	A-4725-850-A	POWER BOARD, COMPLETE			(CP500MD:E51,HK,TW)
		**********			
	1-533-233-11	HOLDER, FUSE			
		< CAPACITOR >			
C902	1-101-005-00	CERAMIC	22000PF		50V
C903	1-101-005-00	CERAMIC	22000PF		50V
C904	1-101-005-00	CERAMIC	22000PF		50V
C905	1-101-005-00	CERAMIC	22000PF		50V
C906	1-161-494-00	CERAMIC	0.022uF		25V
C907	1-161-494-00	CERAMIC	0.022uF		25V
C908	1-161-494-00	CERAMIC	0.022uF		25V
C909	1-161-494-00	CERAMIC	0.022uF		25V
C910	1-161-494-00	CERAMIC	0.022uF		25V
C911	1-104-664-11	ELECT	47uF	20.00%	25V (EXCEPT CP500MD:US,CND,E51,HK,TW)
C911	1-104-666-11	ELECT	220uF	20.00%	16V (CP500MD:US,CND,E51,HK,TW)
C912	1-126-767-11	ELECT	100uF	20.00%	16V (EXCEPT CP500MD:US,CND,E51,HK,TW)
C912	1-126-941-11	ELECT	470uF	20.00%	16V (CP500MD:US,CND,E51,HK,TW)
C913	1-161-494-00	CERAMIC	0.022uF		25V (CP500MD:US,CND,E51,HK,TW)
C914	1-161-494-00	CERAMIC	0.022uF		25V (CP500MD:US,CND,E51,HK,TW)
C915	1-161-494-00	CERAMIC	0.022uF		25V (CP500MD:US,CND,E51,HK,TW)
C916	1-161-494-00	CERAMIC	0.022uF		25V (CP500MD:US,CND,E51,HK,TW)
C917	1-104-665-11	ELECT	100uF	20.00%	16V (CP500MD:US,CND,E51,HK,TW)
C918	1-126-964-11	ELECT	10uF	20.00%	50V
		< CONNECTOR >			
CN901	1-564-321-00	PIN, CONNECTOR 2P			
* CN902	1-764-333-11	PLUG, CONNECTOR 10P			(EXCEPT CP500MD:US,CND,E51,HK,TW)
CN902	1-766-283-11	PIN, CONNECTOR (PC BOARD) 10P			(CP500MD:US,CND,E51,HK,TW)
		< DIODE >			
D902	8-719-902-17	DIODE 1N5401			
D903	8-719-902-17	DIODE 1N5401			
D904	8-719-902-17	DIODE 1N5401			
D905	8-719-902-17	DIODE 1N5401			
D906	8-719-046-07	DIODE 2A02M			
D907	8-719-046-07	DIODE 2A02M			
D908	8-719-046-07	DIODE 2A02M			
D909	8-719-046-07	DIODE 2A02M			
D910	8-719-991-33	DIODE 1SS133T-77			
D911	8-719-991-33	DIODE 1SS133T-77			
D912	8-719-991-33	DIODE 1SS133T-77			
D913	8-719-991-33	DIODE 1SS133T-77			
D915	8-719-109-97	DIODE MTZJ-T-77-6.8B			
D917	8-719-991-33	DIODE 1SS133T-77			
D918	8-719-109-93	DIODE MTZJ-T-77-6.2B			

Ref. No.	Part No.	Description	Remarks
D919	8-719-991-33	DIODE 1SS133T-77	
D920	8-719-991-33	DIODE 1SS133T-77	
		< FUSE >	
⚠F901	1-533-466-11	FUSE, GLASS TUBE (DIA. 5) (T1.25AL/250V)	(CP500MD:E51,HK,TW)
⚠F902	1-533-468-11	FUSE, GLASS TUBE (DIA. 5) (T2AL/250V)	(CP500MD:E51,HK,TW)
⚠F903	1-533-468-11	FUSE, GLASS TUBE (DIA. 5) (T2AL/250V)	(EXCEPT CP500MD:US,CND)
⚠F903	1-576-375-11	FUSE, GLASS TUBE (DIA. 5) (3.15A/125V)	(CP500MD:US,CND)
⚠F904	1-533-468-11	FUSE, GLASS TUBE (DIA. 5) (T2AL/250V)	(EXCEPT CP500MD:US,CND)
⚠F904	1-576-375-11	FUSE, GLASS TUBE (DIA. 5) (3.15A/125V)	(CP500MD:US,CND)
⚠F905	1-533-464-11	FUSE, GLASS TUBE (DIA. 5) (T0.8AL/250V)	(CP500K/CP500MD:AEP,UK,TH,AUS,CH)
⚠F905	1-576-374-11	FUSE, GLASS TUBE (DIA. 5) (1.25A/125V)	(CP500MD:US,CND)
		< LINE FILTER >	
⚠LF901	1-424-150-11	TRANSFORMER, LINE FILTER	
		< TRANSISTOR >	
Q901	8-729-056-23	TRANSISTOR STC352-OY	(EXCEPT CP500MD:US,CND,E51,HK,TW)
Q901	8-729-028-54	TRANSISTOR KTC3205-Y-AT	(CP500MD:US,CND,E51,HK,TW)
Q902	8-729-119-79	TRANSISTOR 2SC2785TP-FEK	
Q903	8-729-056-23	TRANSISTOR STC352-OY	(EXCEPT CP500MD:US,CND,E51,HK,TW)
Q903	8-729-028-54	TRANSISTOR KTC3205-Y-AT	(CP500MD:US,CND,E51,HK,TW)
		< RESISTOR >	
R902	1-249-417-11	CARBON 1K 5% 1/4W F	(EXCEPT CP500MD:US,CND,E51,HK,TW)
R902	1-249-413-11	CARBON 470 5% 1/4W F	(CP500MD:US,CND,E51,HK,TW)
R903	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R904	1-249-437-11	CARBON 47K 5% 1/4W	
R905	1-247-807-31	CARBON 100 5% 1/4W	
R906	1-247-807-31	CARBON 100 5% 1/4W	
⚠R909	1-219-237-11	SOLID 3.3M 20% 1/2W	(CP500MD:US,CND)
		< RELAY >	
⚠RY901	1-755-332-11	RELAY	
		< SWITCH >	
⚠S901	1-786-152-11	SWITCH, SLIDE (VOLTAGE SELECTOR)	(CP500MD:E51,HK,TW)

Ref. No.	Part No.	Description	Remarks
		< TRANSFORMER >	
⚠T901	1-437-251-11	TRANSFORMER, POWER	(CP500K/CP500MD:AEP,UK,AUS,CH,TH)
⚠T901	1-437-253-11	TRANSFORMER, POWER	(CP500MD:E51,HK,TW)
⚠T901	1-437-252-11	TRANSFORMER, POWER (CP500MD:US,CND)	
⚠T902	1-437-248-21	TRANSFORMER, POWER	(EXCEPT CP500MD:US,CND)
⚠T902	1-437-249-21	TRANSFORMER, POWER (CP500MD:US,CND)	
**********			
	A-4725-838-A	TC BOARD, COMPLETE	
		**********	
		< CAPACITOR >	
C402	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C403	1-104-509-11	CERAMIC CHIP 0.018uF 10.00% 16V	
C404	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C405	1-126-934-11	ELECT 220uF 20.00% 10V	
C408	1-104-664-11	ELECT 47uF 20.00% 10V	
C409	1-126-963-11	ELECT 4.7uF 20.00% 50V	
C410	1-126-963-11	ELECT 4.7uF 20.00% 50V	
C412	1-126-961-11	ELECT 2.2uF 20.00% 50V	
C414	1-104-664-11	ELECT 47uF 20.00% 10V	
C415	1-104-664-11	ELECT 47uF 20.00% 10V	
C416	1-126-963-11	ELECT 4.7uF 20.00% 50V	
C417	1-126-963-11	ELECT 4.7uF 20.00% 50V	
C420	1-126-965-11	ELECT 22uF 20.00% 50V	
C422	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V	
C423	1-126-960-11	ELECT 1uF 20.00% 50V	
C424	1-126-960-11	ELECT 1uF 20.00% 50V	
C425	1-126-934-11	ELECT 220uF 20.00% 16V	
C428	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C429	1-164-730-11	CERAMIC CHIP 0.0012uF 10.00% 50V	
C430	1-164-730-11	CERAMIC CHIP 0.0012uF 10.00% 50V	
C431	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C432	1-136-967-11	MYLAR 0.012uF 5.00% 50V	
C433	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C434	1-104-664-11	ELECT 47uF 20.00% 10V	
C435	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C436	1-104-509-11	CERAMIC CHIP 0.018uF 10.00% 16V	
C437	1-126-934-11	ELECT 220uF 20.00% 10V	
C438	1-162-965-11	CERAMIC CHIP 0.0015uF 10% 50V	
C439	1-126-935-11	ELECT 470uF 20.00% 16V	
C440	1-162-965-11	CERAMIC CHIP 0.0015uF 10% 50V	
C450	1-126-965-11	ELECT 22uF 20.00% 50V	
		< CONNECTOR >	
* CN301	1-569-366-11	SOCKET, CONNECTOR 18P	
CN302	1-569-927-11	SOCKET, CONNECTOR 9P	
		< DIODE >	
D401	8-719-975-40	DIODE RB411D-T146	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.	以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

TC

Ref. No.	Part No.	Description			Remarks
		< IC >			
IC401	8-759-242-58	IC TA8189N			
IC402	8-759-508-69	IC BA3126N			
		< TRANSISTOR >			
Q401	8-729-212-02	TRANSISTOR	KTC3203Y-AT		
Q402	8-729-037-02	TRANSISTOR	KTA1266Y-AT		
Q403	8-729-038-67	TRANSISTOR	KRC102S		
Q406	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
Q407	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
Q413	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
Q414	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
		< RESISTOR >			
R399	1-216-821-11	METAL CHIP	1K	5% 1/16W	
R400	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R403	1-216-805-11	METAL CHIP	47	5% 1/16W	
R405	1-216-809-11	METAL CHIP	100	5% 1/16W	
R406	1-216-831-11	METAL CHIP	6.8K	5% 1/16W	
R407	1-216-848-11	METAL CHIP	180K	5% 1/16W	
R408	1-216-831-11	METAL CHIP	6.8K	5% 1/16W	
R409	1-216-809-11	METAL CHIP	100	5% 1/16W	
R410	1-216-848-11	METAL CHIP	180K	5% 1/16W	
R411	1-216-845-11	METAL CHIP	100K	5% 1/16W	
R412	1-216-824-11	METAL CHIP	1.8K	5% 1/16W	
R413	1-216-848-11	METAL CHIP	180K	5% 1/16W	
R414	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R415	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R416	1-216-829-11	METAL CHIP	4.7K	5% 1/16W	
R417	1-216-805-11	METAL CHIP	47	5% 1/16W	
R418	1-216-845-11	METAL CHIP	100K	5% 1/16W	
R419	1-216-824-11	METAL CHIP	1.8K	5% 1/16W	
R420	1-216-848-11	METAL CHIP	180K	5% 1/16W	
R421	1-216-857-11	METAL CHIP	1M	5% 1/16W	
R422	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R423	1-216-837-11	METAL CHIP	22K	5% 1/16W	
R424	1-216-841-11	METAL CHIP	47K	5% 1/16W	
R425	1-216-829-11	METAL CHIP	4.7K	5% 1/16W	
R426	1-216-829-11	METAL CHIP	4.7K	5% 1/16W	
R427	1-216-809-11	METAL CHIP	100	5% 1/16W	
R428	1-216-835-11	METAL CHIP	15K	5% 1/16W	
R429	1-216-835-11	METAL CHIP	15K	5% 1/16W	
R430	1-216-829-11	METAL CHIP	4.7K	5% 1/16W	
R431	1-216-829-11	METAL CHIP	4.7K	5% 1/16W	
R432	1-216-827-11	METAL CHIP	3.3K	5% 1/16W	
R433	1-216-825-11	METAL CHIP	2.2K	5% 1/16W	
R434	1-216-803-11	METAL CHIP	33	5% 1/16W	
R435	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R436	1-216-797-11	METAL CHIP	10	5% 1/16W	
R437	1-216-829-11	METAL CHIP	4.7K	5% 1/16W	
R438	1-216-841-11	METAL CHIP	47K	5% 1/16W	
R439	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R440	1-218-446-11	METAL CHIP	1	5% 1/16W	
R441	1-216-821-11	METAL CHIP	1K	5% 1/16W	
R442	1-216-825-11	METAL CHIP	2.2K	5% 1/16W	
		< TRANSFORMER >			
T401	1-433-372-11	TRANSFORMER, BIAS OSCILLATION			
T402	1-419-080-11	COIL			
T403	1-419-080-11	COIL			

****

MISCELLANEOUS
****

2	1-757-943-11	WIRE (FLAT TYPE) (12CORE)
3	1-796-101-11	DECK, MECH
12	1-757-944-11	WIRE (FLAT TYPE)(17CORE)
13	1-757-942-11	WIRE (FLAT TYPE)(27CORE)
14	1-792-767-11	WIRE (FLAT TYPE) (25 CORE)
65	1-757-946-11	WIRE (FLAT TYPE) (25 CORE)
⚠104	1-783-531-71	CORD, POWER (CP500MD:US,CND)
⚠104	1-558-943-31	CORD, POWER (CP500MD:TH)
⚠104	1-696-169-11	CORD, POWER (CP500MD:AEP,UK,E51,HK,TW)
⚠104	1-696-848-41	CORD, POWER (CP500MD:AUS)
⚠104	1-769-079-21	CORD, POWER (CP500K)
⚠104	1-782-464-21	CORD, POWER (CP500MD:CH)
108	1-757-943-11	WIRE (FLAT TYPE) (22CORE)
209	1-678-514-11	FLEXIBLE BOARD
⚠210	A-4672-541-A	OPTICAL PICK-UP KMS-260B
305	1-757-055-11	WIRE (FLAT TYPE) (16 CORE)
⚠308	A-4735-357-A	BASE ASSY, OP (KSM-213DHAP/Z-NP)
HR901	1-500-670-11	HEAD, OVER WRITE
LCD801	1-804-393-11	DISPLAY PANEL, LIQUID CRYSTAL
M101	A-4672-898-A	MOTOR ASSY, SPINDLE
M102	A-4735-076-A	MOTOR ASSY, SLED
M103	A-4735-074-A	MOTOR ASSY, LOADING(MD)
M901	A-2004-893-A	MOTOR (LD) ASSY (DISC TRAY OPEN/CLOSE)
S102	1-771-957-11	SWITCH, PUSH (2KEY) (REFLECT/PROTECT)
⚠T902	1-437-248-21	TRANSFORMER, POWER (EXCEPT CP500MD:US,CND)
⚠T902	1-437-249-21	TRANSFORMER, POWER (CP500MD:US,CND)

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****
HARDWARE LIST
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#1	7-685-546-14	SCREW +BTP 3X8 TYPE2 N-S
#2	7-685-246-14	SCREW +KTP 3X8 TYPE2 NON-SLIT
#3	7-685-861-01	SCREW +BVTT 2.6X5 (S)
#4	7-685-659-14	SCREW +BVTP 4X8 TYPE2 N-S (EXCEPT CP500MD:CH,E51,HK)
#4	7-685-659-71	SCREW +BVTP 4X8 TYPE2 IT-3 (CP500MD:CH,E51,HK)
#5	7-685-548-19	SCREW +BTP 3X12 TYPE2 N-S
#6	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S
#7	7-685-850-04	SCREW +BVTT 2X3 (S)
#8	7-685-204-19	SCREW ++K 2X6 TYPE2 NON-SLIT
#9	7-685-533-19	SCREW ++B 2.6X6 TYPE2 NON-SLIT

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MEMO

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.06	New
1.1	2001.10	Correction of exploded views and miscellaneous parts list (SPM-01037)
1.2	2005.02	Exchange of Parts No. and Description of Ref. No. 163 and 165 (SPM-05020)